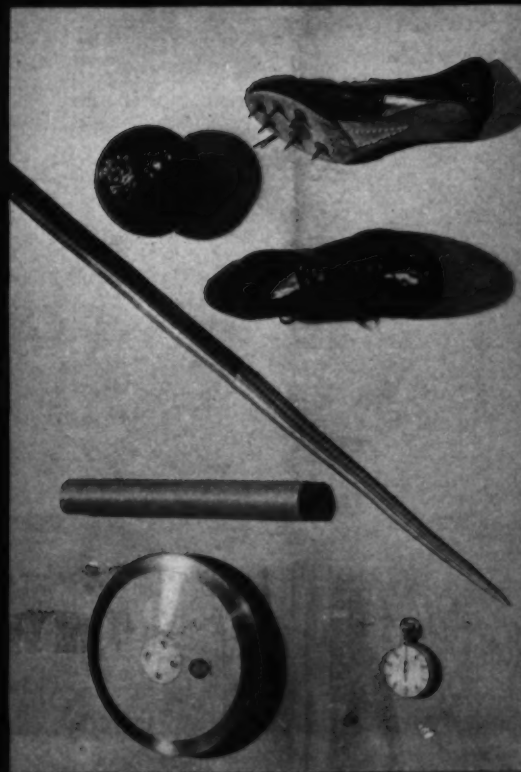
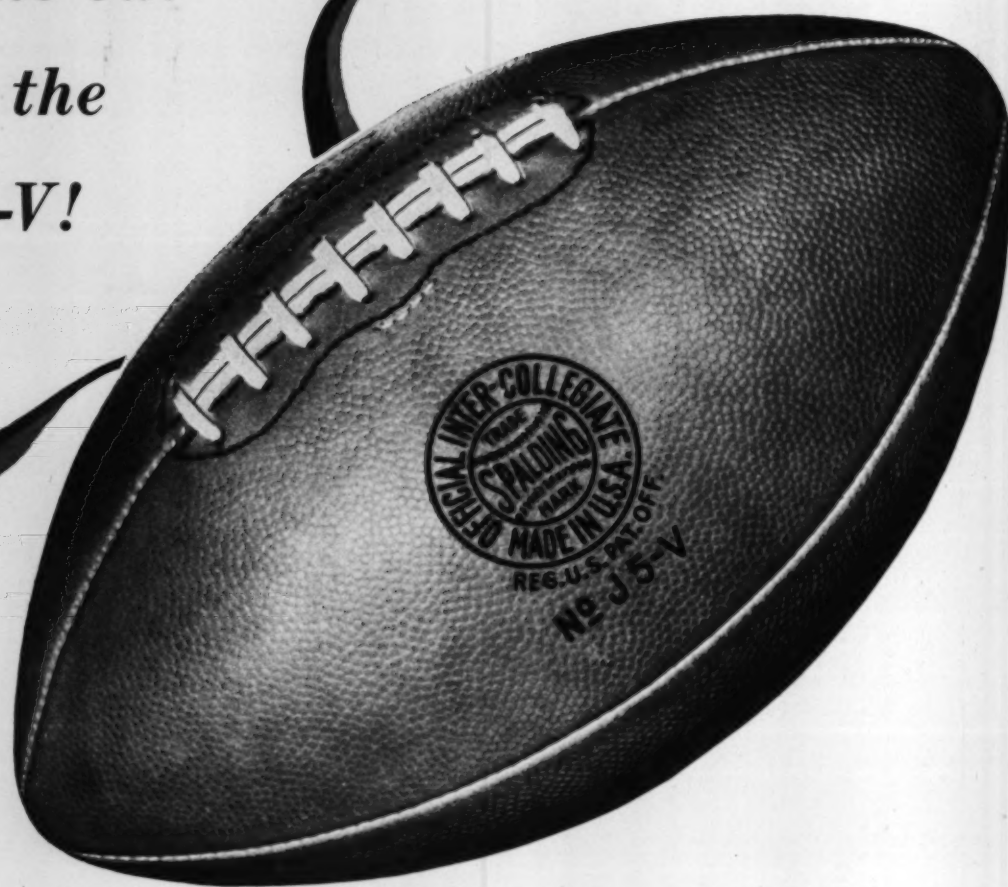


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BULLETIN..

POINTERS FROM COACH REILLY ON THE CRAWL STROKE..

Three essential elements of the crawl stroke are the leg motion, the arm motion and the breathing.

The leg motion must be developed, through practice, into a powerful drive from the hips. An important feature of this type of leg motion, known as the flutter kick, is a slight flexibility of the ankles causing the bottoms of the feet to whip upward at the top of each kick. The toes should be pointed inward, pigeon-toed fashion, so as to cause the water to churn as if agitated by a propeller on a boat. The number of beats to a complete cycle of the arms is determined by the individual and may be either 4, 6, 8, 10 or 12 beats.

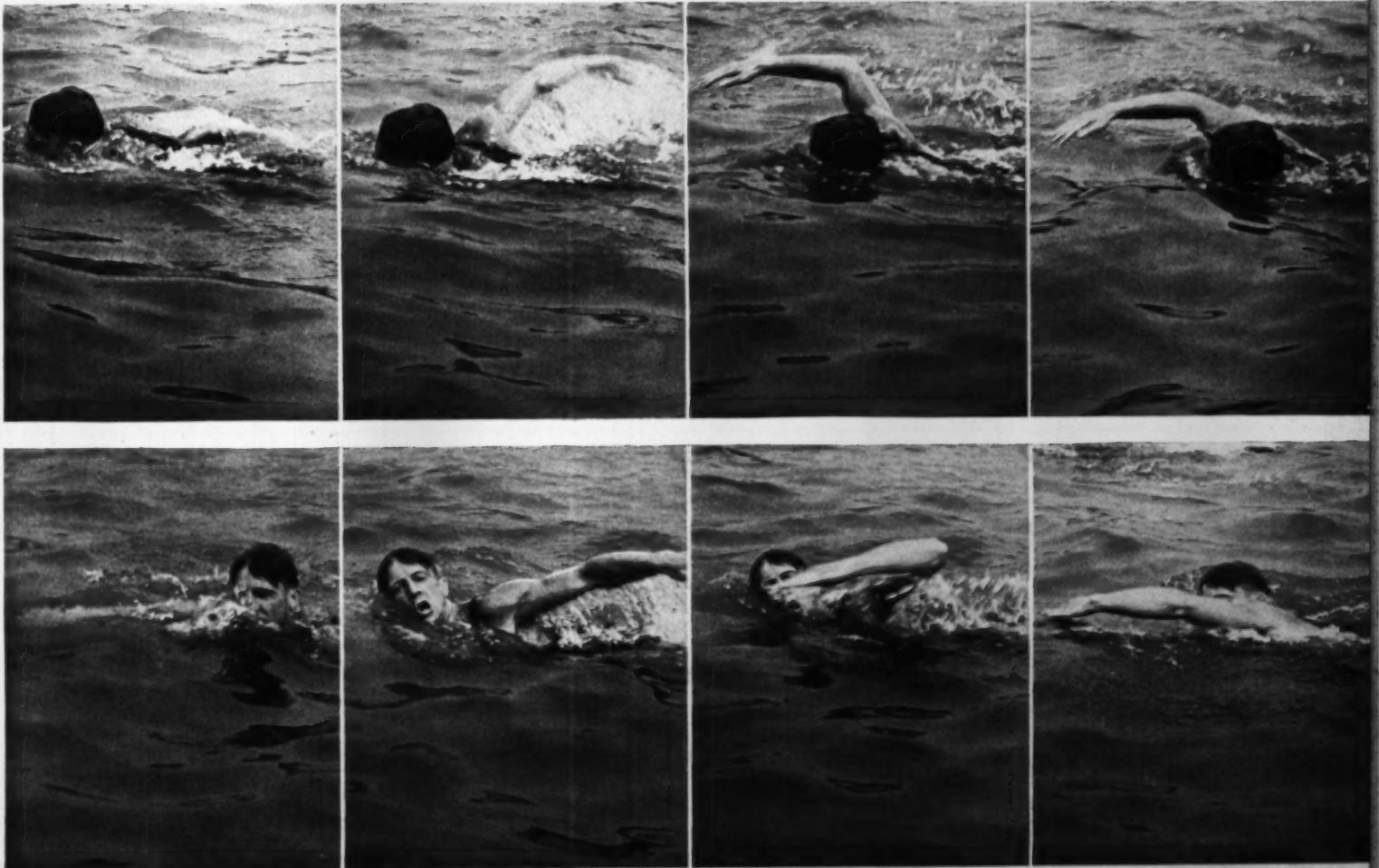
The alternate over-arm motion is performed by starting the drive at the sur-

face of the water directly in front of the head, arm not quite fully extended. Pull straight downward trying to reach the bottom. The recovery is begun just as the hand reaches the hip and is accomplished by bending the elbow and twisting the shoulder so that the hand may be brought forward over the water. Be sure that the hand enters the water before the elbow.

The head is held in a position so that the water is cut just at the eye level.

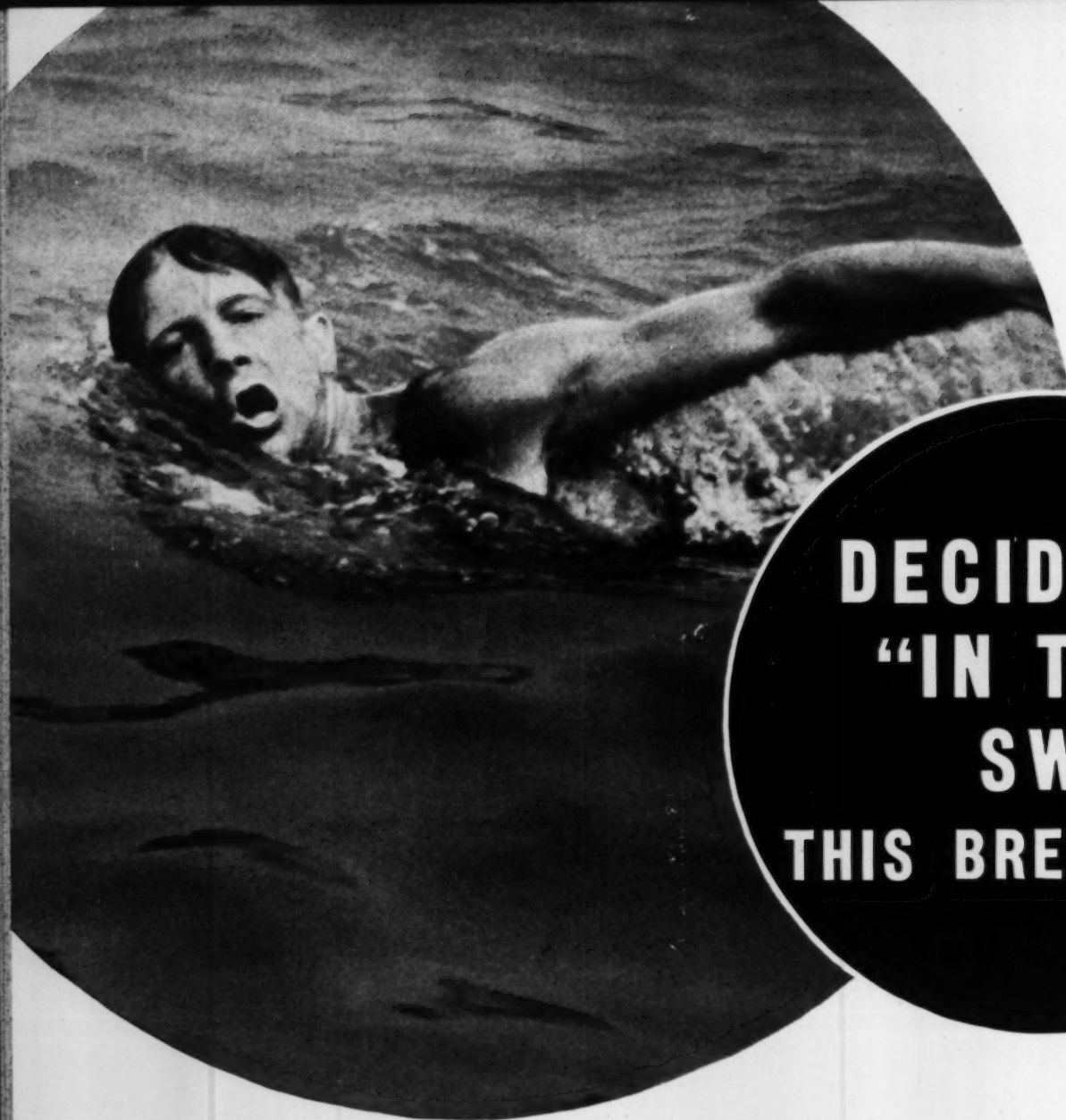
The breath is taken by turning the head either to the left or to the right as the arm is being recovered. Be careful not to let the body roll as the head is turned for the breath. Breathing once every complete stroke is advisable, although in short sprints fewer breaths may be taken in order not to retard the speed.

THE CRAWL STROKE

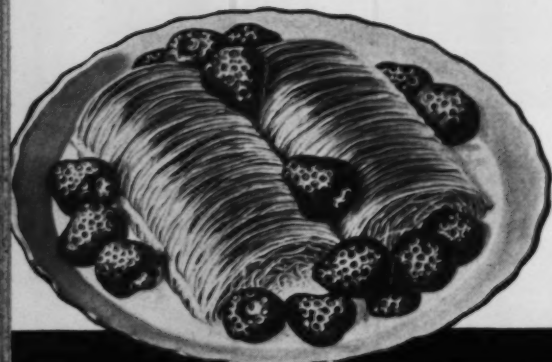


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SCHOLASTIC COACH

Reg. U. S. Pat. Off.

IN THIS ISSUE VOL. 5, NO. 10

SCHOLASTIC COACH ADVERTISERS	1
HERE BELOW	5
EQUIPMENT MANAGEMENT	7
By Arthur P. Mills	
PUTTING THE ATHLETIC PLANT TO BED	12
FEDERATION STAMPS GRID EQUIPMENT	13
ORGANIZATION FOR FOOTBALL	15
By John DaGrosa	
FOOTWORK IN THE BACKFIELD	19
By Douglas A. Fessenden	
DIRECTORY	23

FRONT COVER PHOTOGRAPHS by Owen Reed

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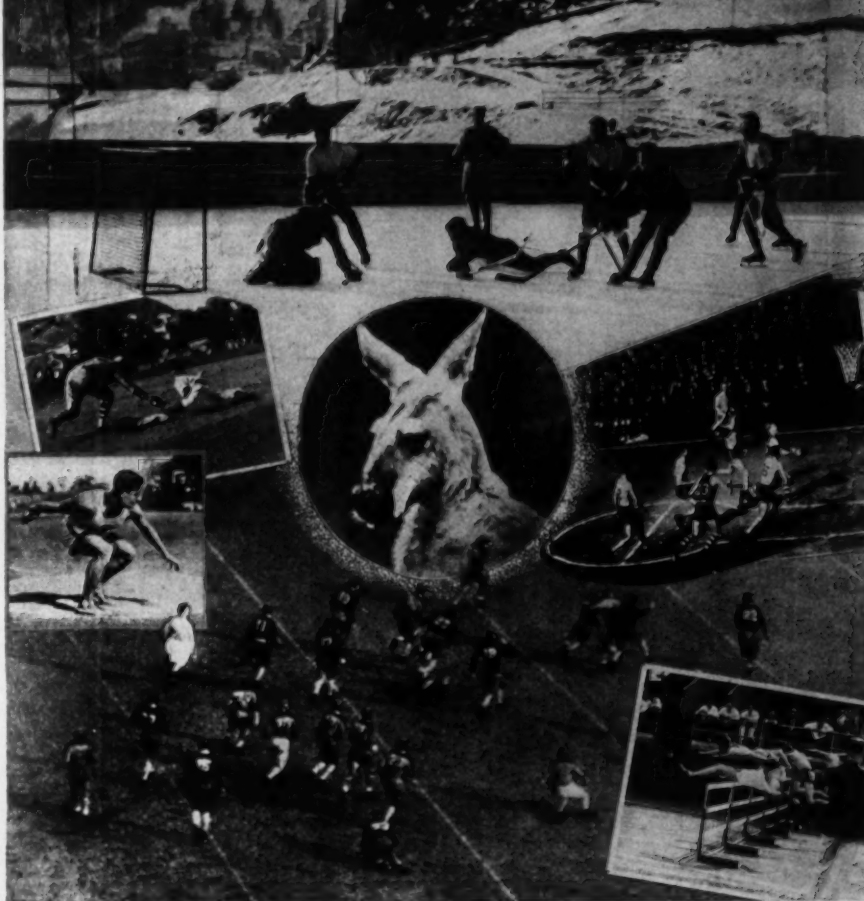
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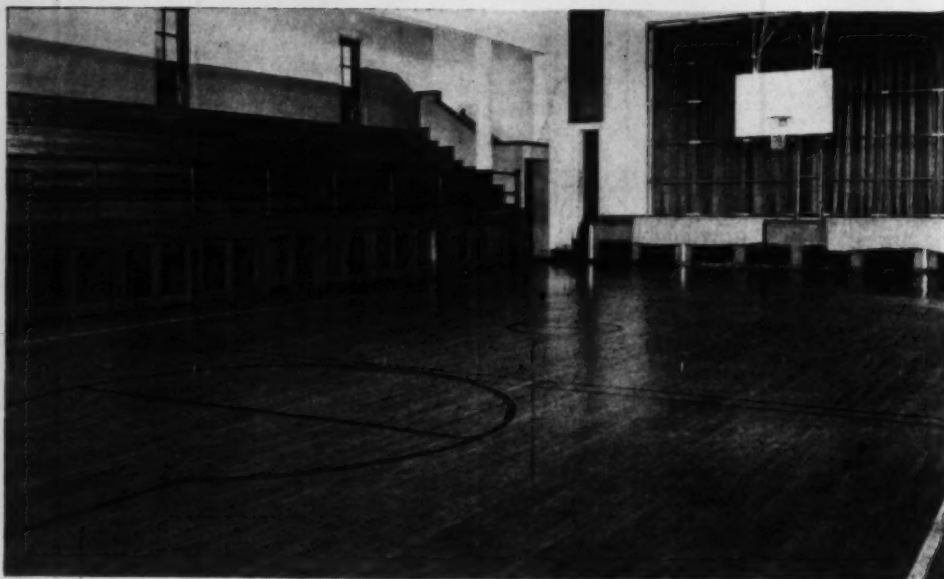
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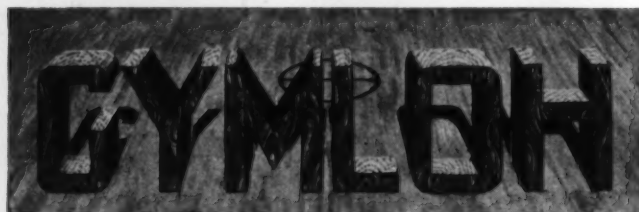
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Rise of recreation

Values for our grandchildren

Nightmare in 10 seconds flat

THE slogan "It Pays to Play," which is being revived by the National Sporting Goods Assn., recalls the great strides the recreational movement has made in America in comparatively recent years. This movement, which can trace its modern background to the German "Turners" of the nineteenth century, has gone through strange and stormy seasons to arrive at its present state of universal approval. Not everyone approves play for the same purpose, but everyone (except perhaps a few Puritans still clinging to the Plymouth Rock way of life) seems to be approving it for one purpose or another. Like scripture which the devil does not hesitate to quote, play can be applied to serve many ends, as witness the two extremes of the purpose it serves in Germany and the United States.

Yet the way play has been fitted into the scheme of our education draws an occasional protest even today from some ancient who begrudges the tax money spent on sports education as a "frill." However, not since the voice that arose in Chicago several years ago at the time of that city's financial distress has there been a squawk with much of an echo. Even those of our present time who take every opportunity to demand that we return to the "values of our forefathers" hesitate to berate the play and recreation movement, for it is clear to most everyone that an industrial civilization that is requiring less and less physical effort from its people must supply some means for keeping man in motion.

How about a "return to values for our grandchildren?"

Athletics and cooperation

A NICE point in support of the affinity between athletics and the social needs of the day was made recently by Mrs. Roosevelt in one of her syndicated articles.

We have laid stress on school and college athletics. At the present time when we are changing from individualistic living to greater group consciousness and responsibility, we need the



A good connection: play skills acquired at an early age.

team play of athletics emphasized. The natural youthful interest in athletics is our opportunity to teach youth what is the significance of athletics in giving us a better life and in building up a community spirit.

It Pays to Pay

READERS of Scholastic Coach are well aware that if it were not for the manufacturers and distributors of sporting goods equipment who advertise with us, we could not produce this kind of a magazine.

One good turn deserves another, and with this thought in mind we called on some distributors last month, a question on the tip of our tongue. We asked them what one thing could we say on our editorial page in this special issue that would help them in their relationship to the 14,000 high schools and prep schools whose coaches are Scholastic Coach readers.

With an accord that somewhat distressed us, they all said that the one thing needed most of all was a sense of financial responsibility on the part of those in charge of the purchase of high school equipment. In other words, a lot of the customers don't pay their bills within a reasonable time, and some of them don't pay at all.

Sporting goods dealers are constantly running up against schools and colleges that will not pay a season's bill because "the coach who ordered the equipment is no longer with us." The dealers are loath to break relations with these debtor schools, for they merely turn around and open an account with a rival dealer. Of course, a school can't go on forever doing this, but it can last long enough and happen often enough to make it a costly nuisance to many dealers.

It is a good policy for schools to close their accounts for the year be-

fore vacation comes. If this is impossible, the school should at least give the dealer a written acknowledgment of the debt, so that in case the school principal or coach leaves for other parts, the dealer has something he can use in effecting collection. This is asking for nothing more than simple sportsmanship.

End of season

WE had a dream the other night, the awakening from which made us feel very glad that the end of the school season was finally at hand and we would be living a more calm and unhurried existence during the next few months.

The dream was right in line with our work—athletics—and we consider it an indication of having been overworked. We told our boss about the dream so that he might know how close we are to the "border line." We don't mind telling you about it.

We dreamt we were back at the Penn Relays and were one of four runners being called to get on the starting line. Just as the starter was signalling us to come up to the line, one of the runners—who looked something like Charley Paddock, but he was wearing No. 77—shouted: "Right formation, hike," and the four of us shifted into a sort of single wingback formation. Then there was another "hike" and we all started digging our holes right there. The only fellow who was anywhere near the starting line was No. 77. The dream had a rather vague ending, but we recall waking up and finding a hole in the mattress.

Whatever Freud may think of it all, we only know that we should have had our fingernails trimmed long ago.

See you in September.

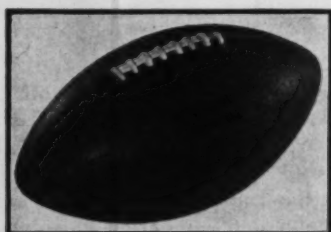
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EQUIPMENT MANAGEMENT

By Arthur P. Mills

Businesslike and systematic methods of handling athletic equipment will show many a dollar saved at the end of the school year. The system used at Waite High School, Toledo is here described by Waite's director of athletics, Arthur P. Mills.

ANY unbiased analysis of a successful coaching regime would uncover the fact that many factors totally unrelated to pure coaching skill will always be present. Such intangibles as personality, promotional skill and social contacts are part of the make-up of every successful coach. But successful coaching goes still further than this. Aside from the success to be gained on the playing field, there is the less glorious, yet more practical, attainment of keeping the athletic department financially sound. In this respect, ordinary care will often show a slight profit—i. e., the receipts barely exceeding the expenses. However, the application of real business skill to the same situation will invariably result in increased profits through lowered costs and the elimination of losses.

Granting that many expense items such as traveling, officials' fees, game employees, field expenses, etc., do not lend themselves readily to reductions, there remains one large item in the athletic budget wherein businesslike methods may effect a considerable cost reduction, namely equipment.

The purpose of this article is to illustrate the part which studied equipment management can play in the financial success of a high school athletic department.

Waite High School, Toledo, has an enrollment of eighteen hundred. Each year its athletic teams play to approximately one hundred thousand spectators. The school's teams compete in football, basketball, baseball, golf, track, tennis, swimming and wrestling.

Before discussing the salient features of the equipment-handling system now in use at Waite High School, some understanding of the weaknesses of the old system is necessary.

Prior to 1928 equipment was handed out to players on the first day of practice. This equipment was kept in the individual lockers until the end of the season. White equipment was furnished each player, and it was laundered and replenished as often as it seemed necessary throughout the season. No stamp of identification was used on any equipment. Game equipment was passed out on the day of a game, and occasionally some of it was

returned. By the end of the season the equipment room looked like the Argonne; the student managers were managing fully-equipped independent teams; and the only equipment to be found resembled something the dog had been chewing on.

It was apparent that a systematic method of equipment handling was necessary to avoid loss and unnecessary expenditures. These points were considered in designing the present system: (1) equipment could no longer be kept in individual lockers; (2) each piece of equipment must be marked for identification; (3) equipment must be accounted for after each practice session; (4) a separate room, with proper facilities for equipment care, must be constructed; (5) individual responsibility for equipment must be fixed; (6) a student manager program to carry on the work of the new equipment-handling set-up must be developed; (7) cost and service records of all equipment must be kept; (8) The

management of the equipment-handling system should be placed under the direct supervision of a faculty member familiar with athletic equipment; (9) a comprehensive study of the best laundering services, the latest reconditioning methods, and the best purchasing procedure should be undertaken by the faculty supervisor.

It seemed logical to strike at the heart of the confusion which existed by planning the construction of an adequate equipment room, adjacent to the locker and training rooms.

Equipment room

Approximately one-third of the locker room was cleared of all movable obstructions, giving us a clear space 15'x70'. An ideal equipment room should be square for the greatest convenience; but our locker room is located upon a balcony running along three sides of a swimming pool, and we had to adapt to that.

Along the inside wall of the space



ILLUSTRATION 1. Equipment racks where each player has his own numbered hooks and where his equipment is kept at all times except when he is wearing it. Notice the football helmet racks to the rear right. These are portable, and are moved back out of the way after the football season. The arrangement permits circulation of air in and around the helmets.

appropriated for the equipment room were constructed ten racks of the type shown in Illustration 1. Two storage closets were constructed at the front end of the equipment room opposite each other. One of these is shown in Illustration 2. As can be seen, these closets run from the floor to the ceiling—which is eight feet high.

Three storage bins, 3'x4'x9', were constructed and placed along the wall opposite the racks. The bins were fitted with hinged covers.

Various accessories in daily use were permanently located in the equipment room to prevent their being carried away or being misplaced. A pump was mounted on the wall; a small locker containing extra cleats, oil, lacing tools, valves, pliers, buffing motor, etc., was constructed above one of the storage bins. The various compartments of this locker were left open, so that a glance would show if any of the articles were missing.

A special football helmet rack, the end of which can be seen in Illustration 1, was designed. This rack is movable and not fixed to the floor as the other racks are. The purpose and use of these racks will be discussed under the heading of equipment handling.

The equipment trunks, used for traveling, are stored at the extreme rear end of the room.

Across the front end of the equipment room, immediately adjacent to the locker room is a partition (see Illustration 3), containing a door and two windows through which the equip-

ment is given out to the players.

For the purpose of discussing equipment in the remainder of this article I have classified equipment as follows:

White equipment—Towels, quarter shirts, supporters, under socks.

Practice equipment—Pants, jerseys, baseball uniforms, sliding pads, shoulder pads, hip pads, knee guards, shoes, warm-up suits, stockings, caps.

Game equipment—Same as above. In football our game equipment is somewhat different than practice equipment—satin pants, wool jerseys and lightweight shoes are reserved exclusively for games. The same condition exists for basketball.

Miscellaneous—Helmets, balls, dummies, shin guards, side-line coats, blankets, blocking pads, special cold weather undershirts.

HANDLING—System and method

A few days before practice is to begin an information card is made up on which the following facts are recorded for each player: name, shoe size, waist measurement and size of jersey. Each player is given a number, and this is the principal key to the control of our equipment system. This number appears upon the locker to which the player is assigned. It is marked upon each piece of his equipment, except white equipment; and it is also marked on the equipment rack above the hooks where his equipment is kept. His equipment is kept here at all times except when he is actually wearing it. (Illustration 1.)

Before the first day of practice the practice equipment is placed upon the racks to correspond to the information card.

White equipment

Each player is given a set of white equipment and assigned to his locker. This is the only equipment which he is permitted to retain in his locker.

This equipment is exchanged at least once a week—more frequently if necessary.

If loss occurs, lockers are searched and two sets of equipment are sometimes found in one locker. Players having duplicate sets of equipment are disciplined by the coach.

Frequent changes of white equipment results in the reduction of boils and various other skin infections.

In Illustration 3 the method of exchanging white equipment is illustrated. Notice that the cupboard containing the various items of white equipment, the receptacle to receive soiled equipment, and the window are all arranged so that equipment may be checked in and out quickly and easily, thereby eliminating confusion and waste of time.

Practice equipment

On reporting for practice, the player comes to the window of the equipment room and gives his number to a student manager. The manager goes to the rack and brings the player all equipment placed under that number.

At the close of practice each evening the player returns his practice equipment to the window and gives it

ILLUSTRATION 2

Cupboards for storing various pieces of equipment being held in reserve. The wearing apparel is arranged according to size, designating numbers for which may be seen on the edges of the shelves. Football pants are arranged according to condition. The cupboards are fitted with hinged doors, and the compartments at the top are used exclusively for woolen goods stored for over a period of time. Equipment stored here includes practice jerseys, warm-up suits, basketball uniforms, track suits, baseball uniforms, footballs, football pants, thigh guards, track shoes, basketballs. The upper part of this section has compartments capable of being sealed and is used for storage and protection of woolen equipment exclusively. Moth-prevention measures are discussed in another article in this issue.



to a student manager who is responsible for placing it back upon the rack.

The senior manager takes the information card and inspects each rack number. Equipment thus displayed upon racks is readily checked, and missing articles are conspicuous by their absence.

In the event that certain pieces of equipment are not checked in, a manager goes to the locker room, locates the player concerned and returns with the missing equipment.

Game equipment

The night before a game, the practice equipment is removed from the racks in the equipment room and temporarily stored. Game equipment is substituted in its place upon the racks and the player follows exactly the same routine on the day of the game as he does for the practice sessions.

Miscellaneous equipment

Helmets are kept on a special helmet rack while in the equipment room for the reasons that they dry more quickly, retain their shape better and are easier to keep track of. They are taken to the field by the student managers who are responsible for their safe return.

Balls are inflated daily and are otherwise cared for in the same manner as the helmets, as are the side-line coats and blankets.

Dummies are stored in the stadium tool house and are cared for by the groundskeeper or student managers.

Special protective equipment is the special responsibility of the faculty supervisor.

Storage

Illustrations 2 and 3 show the storage closets. These, along with the bins, are used for the storage of all equipment not actually in use. The closet in Illustration 2 contains practice jerseys, warm-up suits, basketball uniforms, track suits, baseball uniforms, footballs, football pants, thigh guards, track shoes and basketballs.

The upper shelf of this cupboard has compartments capable of being sealed and is used for the storage and protection of woolen equipment exclusively. Such woolen equipment, when stored for any length of time, must be protected against moths.*

Football pants are sorted as to size and condition. They are mounted with thigh guards and belts before being stored. Note that there is an orderly arrangement of this equipment in storage. The pants in the poorest condition are placed at the rear of the shelves and are used for the reserve and lightweight teams. Such an arrangement makes it unnecessary to pull out more than one pair of pants to get the desired size and grade.

*See next page for method of moth-prevention recommended by the Department of Agriculture.

The jerseys are stored in exactly the same manner.

An identical closet opposite the one illustrated contains all the game equipment — arranged and stored in the same manner.

The white equipment storage closet shown in Illustration 3, while smaller in size than the practice and equipment closets, has ample room for the orderly storage of the white equipment. As in the other closets, the white equipment is arranged in two grades and various sizes and is stored in a position convenient for handling.

The three bins built along the wall opposite the racks in the equipment room are used for the storage of shoulder pads, hip pads and shoes, respectively. The shoulder pads and hip pads are sorted according to condition before being placed in the bins, while the shoes are sorted according to grade, size and condition. The shoe bin is divided into compartments for this special purpose.

Because the height of the equipment room does not allow for the vertical storage of vaulting poles, javelins and cross bars, they are stored along the cross members of the racks illustrated in Illustration 1.

The reduction of the equipment budget has developed along two main lines. In the first place we were concerned with avoiding the expense involved in replacing equipment which had been lost or misplaced each year. The system just explained has succeeded perfectly in this respect and is responsible, more than anything else, for the reduction shown. The equipment items missing at the end of each year are few in number and the value thereof is negligible. Moreover, we are able to ascertain definitely the date of loss, the persons concerned, and the actual value (even depreciation!) on any piece of missing equipment.

The second consideration in the reduction of our equipment budget had



ILLUSTRATION 3. The white equipment to be laundered is dropped into the large basket inside the window. The players do not enter the equipment room for any purpose. Their equipment is handed to them through this window by student managers, and after practice the equipment is returned in the same way and the managers hang it on the proper hooks.

to do with an intelligent purchasing program. From our standpoint purchasing covered far more than simply studying equipment values. For instance, we were concerned with purchasing several services such as laundering, dry cleaning, repairing and reconditioning. A period of six years, and many bitter experiences, were necessary to arrive at all the conclusions which follow. In the end, however, our present purchasing practices have resulted in a material reduction of expense with an increase in the value of the equipment on hand.

Cleaning, repairing and reconditioning

Cotton goods

In this category we include all our white equipment, and in addition our cotton jerseys and practice football pants as well as all track equipment.

All cotton equipment is laundered as often as necessary.

Obtaining the proper laundering arrangements is not as simple as it might seem. There are laundries and laundries. Often the person in charge of athletic equipment selects the largest laundry in town, sends his equipment there and hopes for the best. We have nothing against large laundries, but

our experience has shown that because of the particular service and special laundering methods which we need, a smaller laundry is more satisfactory.

We demand of the laundry that no bleaching materials be used on our equipment. The use of such bleaching materials has a decided tendency to shorten the life of athletic equipment. Bleaches simply whiten cotton goods; they do not aid in cleansing the garments.

Our arrangement includes making all necessary repairs before the garments are returned to us. This gives us equipment which is usable at all times and relieves us of a problem of minor annoyance.

In the past we have purchased our own towels but we have found that the laundry can supply them at less expense to us on their linen service plan. By way of example: The laundering cost per towel was two cents when we supplied the towels. They now supply us with a larger towel and keep it laundered at two cents per towel. This detail has resulted in an annual saving of fifty dollars.

Woolen goods

Our game pants, which are made of airplane cloth, are handled exactly the same as woolen goods as far as cleaning is concerned.

The only satisfactory method of cleaning woolen goods is dry cleaning. Over-ambitious laundries will occasionally claim that they can wash woolen goods. Without going into the chemistry of perspiration, lime, mud, grass stains, blood stains, etc., let me caution the inexperienced equipment man not to fall into this error. One experience of having to replace thirty or forty shrunken jerseys will be a never-forgotten lesson.

Side-line coats are generally not wool. Most of them are treated with a water-proofing material which comes off in the ordinary dry cleaning methods. Obviously such coats will best be laundered. They are mentioned here

Moth Prevention

Woolen equipment put away for the summer should be cleaned and then tightly sealed in a trunk, closet or locker containing a moth-killing chemical. Gummed tape should be used to seal every crack and opening however slight. Killing chemicals recommended by the Dept. of Agriculture are naphthalene, paradichlorobenzene, and gum camphor. One pound of one of these chemicals spread in folds of tissue paper through the layers of garments will protect a trunk full of equipment. Three or four pounds sprinkled on shelves and floor will protect a whole closetful if the door is sealed tight. Protection lasts only as long as the crystals or flakes or balls are present in sufficient quantity.

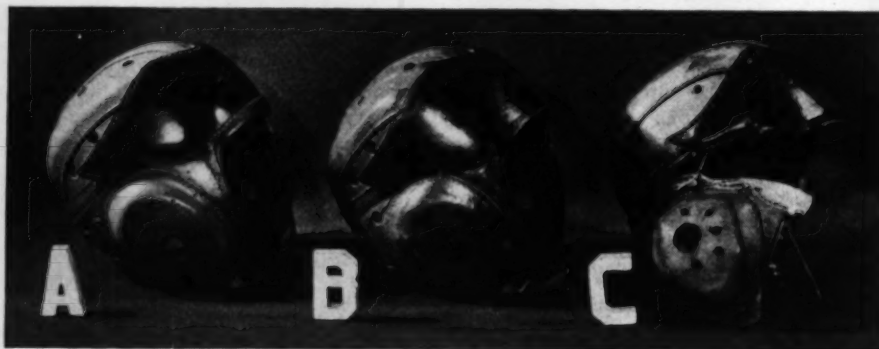


ILLUSTRATION 4. Three helmets of the same grade and manufacture. "A" is a new, unused helmet. "B" is a reconditioned helmet that has been used one season after reconditioning. "C" is one that has been used in ordinary wear for four years without being reconditioned. "Nothing could illustrate the value of reconditioning in a better manner" says the author.

because they are often thought of as woolen goods.

The reconditioning of woolen goods is somewhat more complicated than that of cotton. Repairs to woolen materials can often be made by the dry cleaning company, which is the arrangement we use for minor repairs. For extensive repairs to woolen goods and game pants, we rely upon the services of a tailor who has had considerable experience with athletic equipment. It might be noted in this respect that expensive major repairs to woolen goods are not always justified. Such repairs, being hand work, are naturally expensive, and, unless the garment is new or practically new, may easily exceed the value of the garment.

Leather goods

The proper cleaning methods used in conjunction with leather goods will result in an appreciable increase in the life thereof and the use obtained therefrom. The necessity for cleaning leather goods arises from contact with mud, perspiration and water. While clean equipment is doubtless a virtue in itself, we clean our leather goods for a more utilitarian purpose. Water in any form rots leather; and, unless it is removed promptly, it depreciates leather goods far faster than ordinary wear.

Our players are instructed to remove as much mud from their equipment as possible before returning it to the equipment room. Brushes, towels and small sticks are supplied for this purpose. Such mud as remains on the equipment is removed by the student managers with the aid of a buffing motor.

Shoes are allowed to dry overnight on the equipment rack, and all thoroughly greased with neat's-foot oil before they are used again.

Balls are cleaned with a special liquid ball cleaner which we have developed.* We formerly used commer-

*The formula for this cleaner cannot be revealed as Mr. Mills is arranging to patent and place the product on the market.—EDITOR.

cial ball cleaners put up in paste form, but our experience has shown us that such cleaners invariably leave the balls in a greasy condition which allows them to pick up dirt at the first contact. Grease in any form has a tendency to rot stitches and cause balls to lose their shape quickly besides making the surface slippery and hard to handle.

Football helmets are merely buffed clean. Because of the shellac or painted finish on helmets, no leather preservative should be used on them. Ours are dried on the special rack shown in Illustration 1, which is very effective in allowing the air to circulate about them.

Felt padding in hip pads and shoulder pads can be cleaned by your local laundry or by the student managers. A good grade of soap and water applied carefully to the padding *only* is very effective.

The reconditioning of leather goods, as opposed to repairs of a minor nature, calls for good judgment and a large experience. Much of what follows was learned by bitter and costly experiment. Perhaps you may not agree with some of these conclusions: all I can say is that they represent the least costly method of keeping our leather goods in usable condition.

Invariably coaches agree that the care of shoes is the bane of their reconditioning problems. With ordinary wear and care shoes reach the point where they cannot be used without some sort of reconditioning sooner than other pieces of leather equipment. Without going into the merits of the old style leather-cleated football shoe as opposed to the present detachable-cleat variety, we might as well admit that the detachable-cleat shoe is more susceptible to damage requiring reconditioning. As a result of this situation, the coach is called upon to decide for or against shoe reconditioning more often today than formerly.

Before the installation of our present system, shoes deemed unfit for

further service as the result of a major injury were simply put aside to be gathered up at the end of the season and sent wholesale to a national concern specializing in reconditioning of athletic equipment. This practice proved to be expensive, although the work was done to our entire satisfaction. Yet our old shoes averaged only one additional year of life by being reconditioned, and we felt this did not warrant the reconditioning cost. Obviously, reconditioning pays in the case of inadvertent injury to shoes in fairly good condition.

We have found that the daily inspection of football shoes by the student managers—particularly in regard to detachable cleats—will materially lengthen the life of this equipment and do much toward avoiding the necessity for repairs. Such inspection also discloses damage of a minor nature which our local cobbler is fully capable of fixing. Have such damage attended to at once, before the shoe is used the next day.

Helmets, next to shoes, are subjected to more wear than other leather items. In their case reconditioning is decidedly worth while.

In Illustration 4 (page 10) we show three helmets of the same grade and manufacture. At "A" we have a new, unused helmet; at "C" we have a helmet which has received ordinary wear for four years without being reconditioned; at "B" we show a helmet reconditioned and then used one season. Nothing could illustrate the value of reconditioning in a better manner. At a cost of a dollar and a half the helmet at "B" was cleaned, re-sewn where necessary, re-painted, and a new chin strap inserted. For all practical purposes this helmet is good for several more seasons. Reconditioning also effects economy with our hip pads and shoulder pads.

Purchasing

There are so many conditions which affect the formation of a general policy in regard to the purchase of athletic equipment that it is impossible to hope that one school's policy will fit the specific needs of another. The size of the squad, the money available, storage facilities, and the scope of the athletic program should influence the committee or individual in charge of purchasing. Aside from these limitations, our purchasing policy at Waite High School is carried on with but one aim—to get the best service and longest life per dollar invested that our purchasing experience can give us.

We make it a strict rule to keep an open mind in respect to the products of different manufacturers. Nor do we allow past reputations to sell us goods. Such an attitude has been developed for our own protection. The highly

competitive nature of the equipment business lends itself to rapid changes, and were we unwilling to consider the equipment of all manufacturers we might fail to be aware of a rising star, or worse still, find ourselves hitched to an extinct meteor.

Our equipment room serves as our own laboratory, and the results of our purchasing decisions are not long in forthcoming. Because each piece of equipment we own can always be identified as to cost, make and date of purchase, we could—were we so minded—figure the depreciation per uniform per game—a computation which would stifle the sales talk of the less worthy manufacturers.

Broadly speaking, we favor the purchase of the better grades of any particular make. Illustration 5 illustrates our attitude in this respect. The shoes at "A" cost us \$7.75. They have yellow kangaroo uppers and they were our original choice for our varsity. Needing additional shoes for our second squad, we purchased the shoes shown at "C", at \$6.50 per pair. Both pairs of shoes were the product of the same manufacturer. It is difficult for the average observer to distinguish differences in these two grades of shoes. Directly under these shoes at "B" and "D" respectively, we show shoes of these grades used exactly the same length of time—three months. No better illustration of the differences in stitching, leather, and workmanship could be offered. The tongue and sole of the shoes at "D" have separated entirely. The cleats show an abnormal amount of wear, calling for expensive reconditioning. Obviously our petty economy backfired.

Some controversy has been aired recently concerning the merits of protective padding made of foam rubber. This is hardly a new issue to equipment men, such padding having been in use for a long time. Without any

argument, foam rubber has no superior as a shock absorber for athletic purposes. Moreover it is light in weight, easily kept clean, and it is comfortable to wear. However, the best grade of foam rubber we could ever buy would not stand up for longer than three years, as opposed to eight or ten years for a good grade of white felt. Foam rubber is relatively more expensive than white felt for initial purchase and considerably more expensive when reconditioning or replacement becomes necessary. Lastly, there are several grades of felt to which the financially-minded equipment man may resort, whereas second grade foam rubber is pretty sorry stuff.

In the purchase of helmets, shoulder pads and hip pads, we demand white felt padding, highest quality leather exteriors, simple construction and lock stitching. We feel that there are few gadgets in connection with this equipment that are worth consideration.

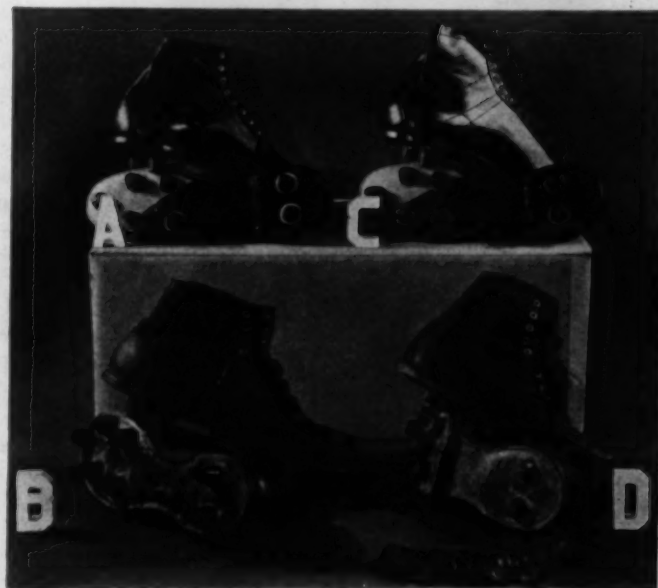
In general we have found that the life span of woolen goods is directly proportional to the original cost. We buy only the best.

The vast number and grades of white equipment presents a puzzling problem. We have purchased all grades and most makes. In the end we have come to the same conclusion—the better grades are the least expensive.

We have endeavored herein to present the equipment-managing system in use at our school. Where we have been dogmatic in our conclusions, rest assured that long experience, unbiased and honest opinions have dictated our stand. We feel flattered that our system has been borrowed by other schools with equipment problems similar to ours. Some detail has had to be left out of this article, but it is our hope that with the aid of the illustrations we have conveyed a clear conception of our method and its use.

ILLUS. 5

The shoes at "A" cost \$7.75. They have yellow kangaroo uppers and were the choice for the first team. For the second squad, the shoes at "C" were purchased at \$6.50. Both pairs of shoes were made by the same manufacturer. Directly under "A" and "C," at "B" and "D" respectively, are shown these grades used exactly the same length of time—three months.



PUTTING THE ATHLETIC PLANT TO BED

THE following notes on maintenance and repairs, collected from numerous sources, may be of some help to the person responsible for the condition of the high school athletic plant.

Indoors

Locker and shower rooms

Shower rooms lined with tile can best be cleaned with special tile cleaner—one without an acid base. An acid-base cleaner will, in a short time, discolor the tile and give it a spotty appearance. Sand may be used to scour walls and floors that are not tile, but it should not be used on tile, as it will scratch the surface.

Cleaning and disinfecting shower walls and floor in one operation is a growing practice. A good disinfectant-cleaner is one with a chlorine base or its equivalent. A good disinfectant of the emulsified type contains about 10 percent of good soap. A good disinfectant is also a good de-greaser. Do not keep powdered chlorine over the summer, as it loses its strength.

Cocoa mats and duck boards should have both sides exposed to the sun before being stored.

Cement paint on locker and shower room walls often peels off, forms large blisters, or simply seems to disintegrate. The three main causes for these conditions are:

- (1) The paint was applied over a surface that was alkaline.
- (2) Moisture drawn through the cement wall collected under the paint film, causing blisters.
- (3) An insufficient number of coats of paint were applied, not perfectly sealing the surface against moisture. Moisture seeped through the painted surface, causing peeling.

The conditions 1 and 3 also apply to cement floors.

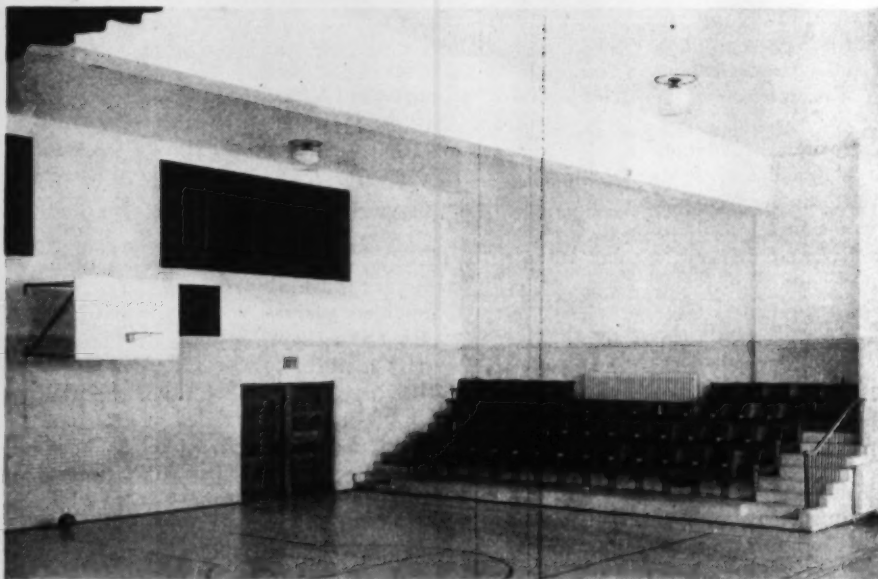
The remedies for the three conditions are:

- (1) Test the surface for alkalinity by wetting it and testing with litmus paper. If the surface tests alkaline, all paint should be removed and the surface neutralized with a solution of 2 pounds of zinc-sulphate crystals to a gallon of water. Allow the surface to dry for 48 hours before painting. A priming coat should be applied before the regular coats of cement paint.

- (2) Remove all paint possible and then paint with a porous cement paint. This type of paint allows the moisture to come through its film without damage. No primer for this type of paint is required.

- (3) Remove all loose paint and then paint the bare spots with a primer. When the primer is dry, apply enough coats of cement paint to seal the surface perfectly.

Above conditions 1 and 3 apply to cement floors. A good grade of cement enamel will wear better on floors.



How the proper use of paint brightens up a gym

Courtesy, Sherwin-Williams

Lockers

Steel lockers should be cleaned and then sprayed with a chlorine solution or its equivalent. Rust spots, if numerous, can be cleaned with a wire brush, a priming coat of red lead applied, and then the locker painted with a flexible enamel.

Gymnasiums

Today the trend is away from gymnasiums with dark ceilings, walls, and woodwork. In brightening up a gym, the ceiling should be painted with a mill-white type of indoor paint. This may be extended part way down the walls. The wood trim and surfaces subjected to soiling and abrasion require a paint of a semi-lustre type. A mixture of flat wall paint and semi-lustre paint in equal proportions will give a painted surface free from reflections or glare. This mixture is well adapted to handball courts, as it will not mar, and it washes easily.

Special finishes for gymnasium floors are becoming more and more popular, not only for refinishing an old floor but in keeping a new floor in its original condition. A treated gym floor should be washed with a soap free from all caustics and then rinsed with clear water and dried. A light coat of the same gym finish as used on the floor can be applied after the floor is thoroughly dried, if this treatment is called for.

Harsh caustics used in cleaning floors raise the grain of the wood in untreated floors and do no good to a treated floor. Excessive use of water causes unfinished floors to buckle as the wood absorbs the water.

Outdoors

Athletic field grass

Soil conditions vary so much in different sections of the country that the few suggestions that could be given here might turn out to be the wrong ones. If the condition of the field is so bad that it has to be completely reseeded, a soil analysis should be made by your local seed man.

A common error in maintaining grass is to over-feed it. A heavy diet of plant food may make grass lush and pleasing to the eye, but the growth will be one that rips up easily under the traffic of cleated shoes. Give the grass just enough plant food for a slow, steady growth; do not force its growth.

Wire enclosures and screen backstops

The heavily galvanized type of wire fence used to enclose athletic fields can go from two to six years without painting, depending upon climatic conditions. At the first sign of pit and rust marks, the work of preservation should be begun. Rust spots should be cleaned with a wire brush, the entire fence given a red-lead primer and then painted two coats of fence paint. Fence paint is made to allow for the expansion and contraction of wire fences. Green fence paints, if not of the finest quality, have a tendency to bleed.

If the wire used on the tennis court backstops is of a fairly heavy gauge, fine mesh type, it should be examined and painted with the same materials as used on the athletic field wire enclosure. When [Concluded on page 36]

FEDERATION STAMPS GRID EQUIPMENT

A NOTABLE advance in the campaign for safety in football was made last month with the announcement by the National Federation of State High School Athletic Associations that henceforth all football equipment fulfilling certain requirements in materials and construction designed for safety will bear a tag with the following inscription:

THIS ARTICLE APPROVED BY
NATIONAL FEDERATION OF STATE
HIGH SCHOOL ATHLETIC
ASSOCIATIONS

See the accompanying Fig. 1 for the design of the approved tag. On the reverse side of the tag will appear the following statement:

NOTICE: The design and construction of this article provides adequate protection for high school football players. It incorporates the safety features specified by the National Federation of State High School Athletic Associations and is built in accordance with the standards approved by them. The article bears the official label and tag.

In addition to the tag which will be attached to each approved article there will be an approved label which will be sewn in the garments and stamped on shoulder pads and headgear. Fig. 2 shows this label.

Cooperating manufacturers

The plan for setting certain standards of safety in construction of equipment and the labelling of approved equipment was worked out in conferences between a committee of the National Federation and a committee representing the following manufacturers, all of whom now hold a license to use the tags and labels on approved equipment: A. G. Spalding & Bros., A. J. Reach, Wright & Ditson, Wilson Sporting Goods Co., Dubow Mfg. Co., Great Western Athletic Goods Co., P. Goldsmith Sons Co., Rawlings Mfg. Co., Draper-Maynard Co., and O'Shea Knitting Mills.

Each of the above firms has made up a line of merchandise which meets the standards set up by the joint committee and these articles will be available for the 1936 football season.

In its announcement of the plan, the National Federation committee said:

"A great deal of care is given by the joint committee to maintaining proper standards for these articles. The material and type of construction are tested in a United States testing laboratory under the supervision of the National Federation Committee and only those articles which satisfy these rigid tests are approved. In case an article made by a licensed manufacturer is found to be inferior, a government test will be immediately ordered and if any inferior materials have been used the approval of the National Federation will be immediately withdrawn for that article and, in case dishonesty is indicated, for any article produced by that manufacturer.

No added cost

"Neither the National Federation nor any individual connected with it profits financially from this arrangement with the manufacturers. The cooperating manufacturers have set aside a sum not to exceed \$1,000 per year from their experimental fund to take care of the expenses of administration and for making the proper tests of materials. Nothing is added to the cost of the approved articles because of the licensing arrangement. The benefit to legitimate manufacturers will be determined by the extent to which high school men will insist on the use of the National Federation approved label. It is good insurance against cheap and shoddy material or inferior construction.

In many cases cheaper grades of cloth, fiber, padding and leather can be made to appear like better grade materials. The length of fibers in thread, the type of kapok which is used in padding, the coloring processes used in dyeing, and the type of weave can be considerably cheapened without making any appreciable difference in the appearance of the article. As a result, a school may be led to buy a cheap article which appears to be just as good as one made of tested materials. It is to guard against this

cheapening and to insure maximum safety that the licensing plan is put in force. The proper tag and label on an article is a guarantee that the materials have undergone a rigid test in a United States testing laboratory and are exactly as they are represented. There is no such insurance if materials without the label are purchased."

The National Federation committee working with the manufacturers on this plan is made up of P. F. Neversman of Marinette, Wisconsin; H. V.

Porter of Chicago; E. R. Stevens of Independence, Kansas; E. A. Thomas of Topeka, Kansas; and C. W. Whitten of Chicago.

Any manufacturer may participate in the plan who agrees to the license provisions and whose articles pass the tests.

At this writing (May 25), the manufacturers have received from the National Federation Committee complete specifications for the three basic items of equipment, namely headgear, shoulder pads and pants. The committee regards these three items as the basic minimum requirement for adequate protection.

The manufacturers now have samples of each item constructed according to the basic minimum requirements,

and will list the new line in their 1936 football catalogues. The plan does not call for one stated price for each item. Catalogues will list approved equipment at many prices. For instance, one manufacturer will catalogue eleven approved football helmets, ranging in price from \$5.35, \$6.25, \$6.60, \$7.80 and up.

The plan is the result of a two years' effort on the part of the National Federation committee to bring the greatest measure of safety to high school football players. "The work of the committee does not end with this step," the committee announced. "As the study of football injuries and their causes advances, improvements will be made in the construction and design of the minimum standards in protective equipment." High school coaches everywhere are expected to hail this plan as a great triumph in the campaign for keeping football on the approved list of games for high school boys. Many high schools have either given up football or have been seriously considering giving it up in view of the toll of injuries it exacts each autumn. The equipment approval plan should do much to dispel the fear of many schools, but the committee points out that other factors in safety, such as thorough coaching in fundamentals, strict officiating, the use of the official interscholastic rules for high schools, and resilient grassy practice and playing fields, must be observed to obtain maximum benefits.



Fig. 1. Design of front face of the tag that will be attached to football equipment passing the test for safety and quality.

















Fig. 2. Design of the label which will be sewn on all cloth equipment approved, and stamped on headgears and shoulder pads.



Unchallenged Leadership!

GoldSmith SPORTS EQUIPMENT

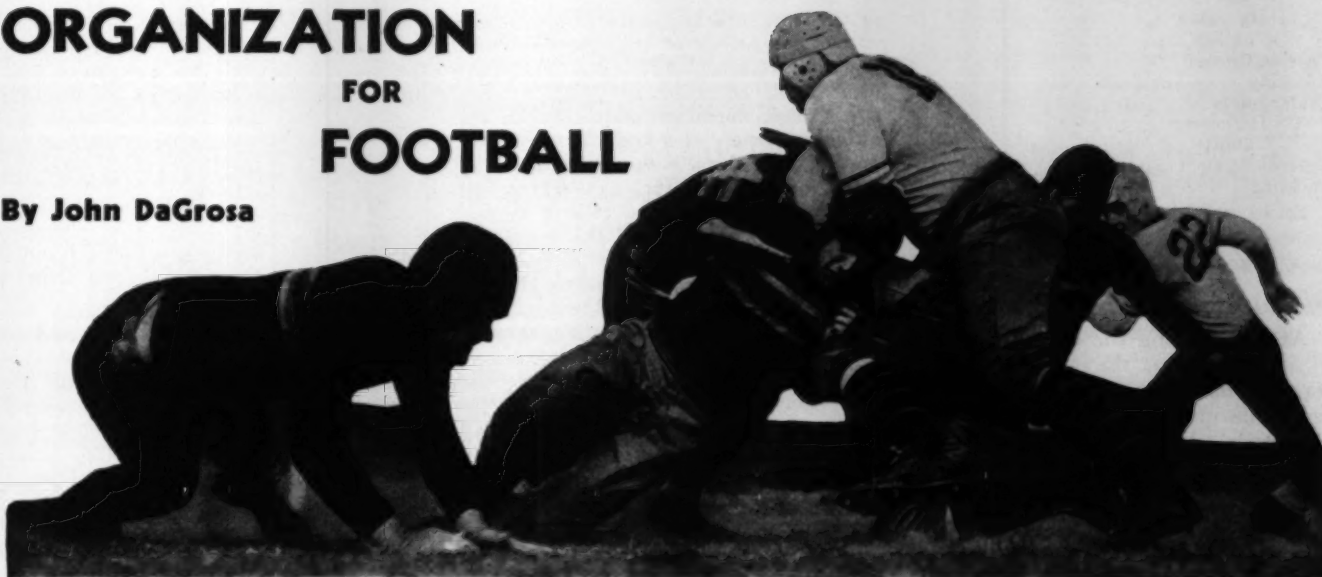
 Goldsmith Athletic Goods Equipment  has ever been outstanding 
 always "Just a Year Ahead."  Season after season,  year after year,
 new, advanced,  and practical ideas in athletic equipment and clothing 
 have been originated, designed,  and requirements of the various sports
 adhering to standards of quality  that will always render the ultimate
 in service  and satisfaction  Goldsmith has won a leadership  that
 remains unchallenged. 



THE P. GOLDSMITH SONS, INC.
 JOHN E. FINDLAY STS. CINCINNATI, OHIO U. S. A.

ORGANIZATION FOR FOOTBALL

By John DaGrosa



John DaGrosa is by way of becoming the country's outstanding authority on football teaching processes. His "Manual for Functional Football" (reviewed in the November, 1935, Scholastic Coach), is the most comprehensive work on the game. It has won such high approval that DaGrosa now has a ready market for it in teacher-training institutions where, broken up into five smaller volumes each covering one of the divisions into which the original work is arranged, it is the prescribed text for students of football. DaGrosa played at center, guard, tackle and end on the Colgate teams of 1922, '23, '24, and '25 coached by Dick Harlow; was all-American on the '25 undefeated team. He was line coach for Lou Little at Georgetown from 1926 through 1930. Then he went to Temple University, where he was line coach and instructor in law. He got his law degree from Georgetown. DaGrosa is now president of the American Football Institute, Philadelphia.

SOMETIME before September first (the earlier the better) the football coach should have pretty well conceived plans for his new campaign. These plans should be based on the following four general considerations:

- (1) He should visualize and consider the material for the coming season . . . its quantity and its quality.
- (2) He should determine an offense—including formations, plays and fundamentals—on the basis of natural attributes, capabilities and possibilities of his returning material.
- (3) He should remember the strength and weaknesses of his team in the games of the past season.
- (4) He should plan the organization of his practices, from day to day, the plan depending largely on the amount of assistance he may have.

Visualize and consider material

There has never been an "undefeated football coach." Graduation, or an exodus of some sort, comes to all

football stars, and the coach must continually build for the future. Boys grow fast, and it is surprising how one summer will show so great increases in growth of boys, ushering grown material to the coach in the person of boys who were seeming infants the year before. No coach should ever build for any one season, for there will always be boys in the various stages of natural development—an item for the coach to remember and visualize when he considers his material for subsequent seasons.

Classification of material is very important. Boys with ability should be classified into three groups: good, fair and poor—based on their ability in running, blocking, passing and kicking. Then, too, boys should be classified in groups based on individual adaptability; if the reserve material is poor for one position, the coach should consider converting certain boys from other groups to better balance the squad.

After the coach has classified his material as to quantity for each position, and has classified them according to their ability, he should consider the selection of his players along somewhat broad lines, and many conditions must be taken into consideration as to the selection of each man. The following five elements must be taken into consideration on each selection:

- (1) His natural ability in relation to his position.
 - (2) His spirit and attitude toward football and the entire team.
 - (3) "A good big man is better than a good little man."
 - (4) His offensive ability in relation to his defensive ability—(there should be some sort of balance).
 - (5) His ability to think for himself and be natural and not mechanical or have a "one track" mind.
- Most players are selected for their

offensive ability, with the exception of the tackles and backers-up. The execution of the fundamentals of offensive play comes much harder to learning players than the execution of the fundamentals of defense. To get boys to execute their assignments properly on the offense requires long practice and long patience on the coach's part.

Note: When we consider the work of a tackle on the offense in relation to his work on the defense and which is more important to the team as a whole, we then must look at that which is more essential and select him accordingly. There is no question as to the relative importance of a tackle's defensive work.

Backers-up are very important and a great part in any defense. A good backer-up is usually a center or full-back, and both should be selected largely on their defensive ability.

After squad classification, the players should be selected on the following basis:

Backs. The selection of backs, for classification of ability, should involve first their individual ability as follows: (1) running; (2) bucking; (3) forward passing; (4) kicking. And all backs must have the ability to: (1) block, (2) tackle, (3) defend against passes.

Ends. The classification of ends' abilities:

- (1) Offensive ability
 - Blocking tackles
 - Pass receiving
- (2) Defensive ability

Line play
Under punts

Tackles. Tackles should be classified, first on defensive ability, and, second, on offensive ability.

Guards. Guards should be classified as follows:

- (1) Offensive ability
 - Line interference
 - Blocking
- (2) Defensive ability

Centers. Centers should be classified on the following basis:

(1) Offensive ability

Passing the ball
Blocking
Under punts

(2) Defensive ability

Defense against passes
Tackling

After the coach has classified his material as to quantity and quality, he should start to build his offense.

Planning the offense

After obtaining the average weight of every player, the ability of outstanding individuals, the possibility of future developments, and the natural ability, speed and power in the squad, the coach should definitely decide upon an offensive formation or formations and plays that will fit his material, and also decide upon fundamentals which will aid in the execution of these and yet be within the capabilities of the players on the squad. Certain set objectives should be kept in mind when deciding on formations, plays and fundamentals—power, deception, passing and kicking, in relation to the ability of the squad—all of which objectives are the essentials of any offensive formation.

Note: All plays on the offense should look alike at their inception. All plays should have a certain amount of power or deception or both, since power in the interference is necessary in clearing the way for the ball carrier, and deception is necessary in drawing the opposition off balance or out of position. Speed, power and deception go hand in hand on the offense. Power alone as a team's weapon makes the team resemble a fighter who cannot duck or feint. Or, a team with deception alone resembles the boxer whose fine footwork and expert feinting have given him an advantage he cannot follow up because he lacks the punch needed. Nothing looks worse than a football team trying to execute plays from a formation not designed for them.

Designing the suitable attack

Suppose we consider the possibilities of squads on the basis of their natural attributes:

If, in general, the squad has weight and strength, with little natural ability and knowledge of football, the coach's objective should be power in his offensive system.

**Heavy,
strong
squad**

With this sort of material it would be useless to have a shift or shifts, or even signal calling on the line of scrimmage. A simple huddle to convey the play would be most appropriate, with "phrases" as signals, to be sure everyone knew the play and received it in the huddle.

The offensive formations should be designed for power and power alone. Either an unbalanced or balanced line, separated

or tight, with backs located close together within the spread of the offensive ends, such as "Diamond," "T," "Box," or "Tandem" would be fitting.

All plays should be designed with the ultimate purpose of getting all the power possible into them, with the exception of a few outside plays, such as end runs and laterals, and a few passes to keep the defensive line spread and the secondary back. All plays should be directed off tackle and within the offensive ends to gain ground, such as straight and deceptive off tackle plays, skin tackle smashes, direct and indirect bucks, delayed and cross bucks, etc., which would provide the necessary power looked for in this offense.

A quick kick should be developed from a closed formation to keep the safety man back on the defense all the time, but if not back, it would prove a good offensive weapon.

The punt also should be developed from a punt formation and resorted to as an offensive weapon and not a defensive one.

The technique in the execution of all fundamentals should be based upon the sole objective—power. The stance of the line should be with a four-point base so as to get the most power out of the forward charge. Blocks should be shoulder and cross-body because of weight behind each block. For making holes they should resort to straight double-teaming and shoulder blocking. Only one guard should run line interference while the other cuts through the line to cut down secondary, because of the latter's speed and the possibility of telegraphing the play before the snap of the ball. Boxing of tackles should be done with straight shoulder blocks, riding tackle off the line of scrimmage, meeting strength with strength. The backs should obtain a crouched stance or a modified sprint stance, so as to get full power and speed forward. All backs should be taught to interfere standing up and not drop down on hands and knees.

On all passes only two or three receivers should be in the secondary, with object to throw to one man, while the others block for the passer—giving him time to get set and pass and also giving receivers time to run deep.

The defensive set-up should be 6-2-2-1 or 5-3-2-1 because these would give plenty of pass protection in the secondary, thus covering the weakness of this type of material on the defense. The proper forward pass defense should be a combination of man-for-man and zone. Ends should drive across, hard and fast, to rush passer; backers-up should cover zone in order not to be drawn out of position by deceptive plays and decoy receivers; defensive wings and safety cover either zone or man-for-man. The line would be able to hold its own, provided the end and tackles would drive across the line.

The fundamentals used by the defensive linemen should be with a four-point stance so as to keep the power low, and the entire line should be assigned territory to protect with a limited number of charges (shoulder, forearm, dip, and double-coordination charges). Cooperative defense line maneuvers such as end and tackle criss-cross, double cross-leg pulling, etc., should be eliminated, because this type of material lacks speed.

If, in general, the squad is light and fast, with two or three heavy boys, and the squad as a whole possesses much natural ability and knowledge of football, the coach's objective should be speed and deception in his offensive system.

**Light,
fast
squad**

Calling signals on the line of scrimmage, shifts or a huddle would all work well.

The formation should be assigned for speed and deception, such as a double wingback; balanced or unbalanced, tight, separated or split line; or semi-punt or boxed over-shifted backfield with balanced or unbalanced line.

The plays should be designed for plenty of speed and deception. Plays should be directed outside the ends but would work well inside, too, because of deception as well as speed. Variation of forward and lateral passes would work well with this type of material.

The linemen assume tripod stance in order to get plenty of speed coming out in the interference. Two guards could run line interference with such speed and natural ability. Cross-charging, mouse-trapping, shoulder blocking, roll blocking and cross-body blocking would be appropriate blocks for this material. The backfield should assume a semi-upright stance in order to be able to execute deceptive movements.

The 7-1-2-1 or 6-2-2-1 would be good defensive set-ups. The defensive line should assume a crouched stance and hand-fight their way across the line, with a variation of charges such as forearm shiver, double-coordination, split, and slice charge.

If, in general, the squad is good, and equipped with excellent punters and passers, the coach's objectives should be speed, power and deception, with passing and kicking.

**Squad has
good
punters,
passers**

The formation should be well balanced in order to get the full benefits of the material. Often a coach resorts to several

formations to get his material across in the best possible manner.

With an excellent passer, receivers should be immediately developed and pass plays should play a great part on the offense. All fundamentals should be based on speed and deception so as to use material to the best possible advantage.

If, in general, the squad is only fair, with two good backs who can run, pass

**Limited
squads**

and kick, the coach's objective should be to build his offensive system around these two players.

With only two good football players and with fair material, the coach should build his entire offense around these two men. With good passers and punters the formations should be designed so passer can have plenty of time to pass and get protection and also so ends and backs can get into the secondary easily without much interference. All passing formations should have good running play possibil-

ities as well as a quick kick and punt, such as short punt formation, semi-punt formation, semi-spread formation. The entire offense should be based upon triple-threat men—passing, running, and punting.

With two good men in the backfield and poor line material, the coach is in a bad way. First, he should use one man in the line interference to aid the ball carrier, because this would eliminate defensive men breaking through and also not slow down the backfield by poor linemen. Second, he should keep his interior line close together (tight line) so as to give them concentrated strength within as a unit, and also to bring in the defensive line so that the outside attack will be made easier. Developing of pass receivers and plays to meet all types of defensive set-up is very important. Blocking (shoulder and cross-body) and tackling (shoulder and head-on) should be practiced daily.

The reason for building around two men is to give the entire team an offense to work on. The coach should develop more passers and receivers as well as good blockers and tacklers. Just as soon as others develop he should take advantage of this and add their ability to the offense.

Build-up

In determining his objectives, the coach should bear in mind the relative strengths and weaknesses of the following: (1) huddles as compared to signal calling; (2) balanced line as compared to unbalanced lines; (3) split lines as compared to tight lines; (4) close formation as compared to open formations.

No matter how the coach plans for the approaching season, he must remember: (1) his objective must be based upon his material for the coming season; (2) his offensive formation should fit his objectives; (3) his plays should fit his formation; (4) his fundamentals should fit his plays; (5) the technique in the execution of fundamentals should be within the ability of the individual players.

Strength and weaknesses of past season

A season record as to strength and weakness of certain fundamentals, plays, formations and personnel should be kept from year to year by the coach. This record is invaluable in planning for the coming season. Recorded weaknesses of the past season could be corrected in the daily work program. Recorded strength could be emphasized and featured for the coming season.

Records of strength and weakness of the past season play a great part in the organization of practice for the coming season. If the forward-pass defense of the past season has been weak, then the causes of this weakness should be eliminated or corrected by more practice in the art of defending against passes. If tackling or blocking has been weak, then more time should be added to these fundamentals on the daily practice schedule. If certain plays have been successful, they should be retained in the formation for the coming season.

No coach should ever allow weaknesses to be repeated from year to year, because they will soon become known to all his opponents. He should always correct faulty fundamentals, plays or formations, and be advanced in his knowledge of the technique in the execution of each.

Organization of Practice

The organization of fall practice is divided into two parts—early and late season practice. Programs for each follow:

Early fall practice. Aims of—

First week: To get entire squad in perfect physical condition through various means of training. Lecture to entire squad on the value of practice, training, and football. Let the entire squad know the type of formations and fundamentals to be used for the season. Signals should be explained and at least three plays given to the team. Should get in at least one afternoon of scrimmage. Coaches' and players' meetings each day.

Second week: Get more training exercise in than during any other week—grass drills, sprints and heavy work. Work on all individual fundamentals that go to make up future plays. Scrimmage four days, and know who is who on the squad. All attention should be given to offensive fundamentals. More plays should be added to the offense (the fundamentals that make up each play should be given days before play is introduced). Coaches' meetings each night and meeting with the squad each day.

Third week: Time given to training exercises should be shortened day by day. Weaknesses and strength should be stressed and emphasized. All fundamentals—individual and cooperative—should be practiced in full uniform under fire (scrimmage). Blocking and boxing, in addition to interference, should be stressed. Making of the first and second team should start. Attention given to weak players for last chance, in order that future time will not be wasted. More plays should be put in, timing and perfection of plays through signal drills and dummy scrimmage stressed. Blackboard talks and skull drills should be held daily.

Fourth week: Short time for training exercises and more time on fundamentals. Tackling should be stressed with various defensive line charges. Forward pass defense should be stressed, together with forward pass offense. Sequence plays should be added to the offense, as well as various take-off plays. Deception should be commencing to run smoothly—in speed and timing. Punt formations should be added and the protection given punter developed. All work should be given during scrimmage. Should have at least three meetings during week.

Fifth week: More attention given to team fundamentals on the offense and defense. Plays for the first game should be practiced. Kick-off lineup and kick-off return should be organized. Technique for the execution of all fundamentals that make up the plays for the first game should be polished. Defensive football should be stressed for at least one day. Dummy scrimmage and signal drills each day, with at least three days of scrimmage. Day before game should be light—

have at least three meetings, including a good skull drill.

Late Season Practice. Aims of—

Sixth week: Very short training exercises—walk day after game, and talk over mistakes—study of scout report—practice fundamentals that looked weak in game. Add another play or two. Practice defensive setup and the forward pass defense—punting practice—one hour scrimmage, with plenty of dummy scrimmage and signal drills. Two meetings.

Seventh week: Short time each day for training exercises. Go over weaknesses of last game, including offense and defense. Go over opponents' plays and formation. Add one play or two. No scrimmage, but dummy scrimmage and signal drills. Scout meeting and game meeting.

Eighth week: Short time each day for training exercises. Go over weaknesses of last game—study scout report of opponents. Plan defense and offense. Half-hour scrimmage, dummy scrimmage, and signal drill. One meeting for scout report and game.

Ninth week: Short training periods. Technique practice in execution of fundamentals. Timing and perfection of plays through daily dummy scrimmage and signal drills. Defensive plans should be laid out and offensive attack for game stressed. Time to develop third string players along with first and second by using the regulars as coaches. One meeting for scout report and game.

Tenth week: Short training period. Scout report study. Practice technique, timing, and speed in execution of fundamentals and plays. Defensive practice. Dummy offensive and defensive practice. Signal drills. Scrimmage for players not playing in games. One meeting for scout report and game.

Eleventh week: Same as tenth week, subject to mental and physical condition of squad and showing in last game.

Twelfth week: Same as tenth week.

Daily work program

For the coach with one assistant.

Early fall practice. Note: Only one week is presented, to show how the organization of practice is planned.

Monday:

30 min. Indoor meeting (class room, dressing room, etc.). Head coach welcomes boys out and explains training rules for the season. Describes schedule to be played and emphasizes the hard work for the coming season. Expresses the pleasure (and for the other coach or coaches) in undertaking the task of coaching the team for the campaign.

20 min. Training calisthenics (body, leg, and running exercises, as well as games). Under direction of team captain and assistant coach. Head coach should walk around and make constructive comment.

10 min. Sprints (10 yards), head coach—with ball—starting them off.

60 min. Individual fundamentals. Head coach takes the backs in stance—starts—punting—passing and punt and pass receiving. Assistant takes the linemen in stance and charge (emphasizing the charge).

Poor
line

30 min. Explanation of formation and type of plays for the offense (as well as signals, huddle or shift—whichever used) by head coach.

10 min. Sprints and long run (supervised by head coach).

(Note: If possible for the first few days, there should be an hour's meeting in the evenings, for the purpose of going over signals and plays. These meetings could be called for before beginning practice, because of tiredness of the boys after practices.)

Tuesday:

20 min. Training exercises (body and leg exercises) under direction of captain, assistant coach and head coach.

10 min. Short sprints (10 yards) under direction of head coach.

60 min. Fundamentals—backs under direction of head coach should practice stance, starts, punting and passing (head coach should explain the techniques in the execution of play). Linemen should perfect stance, charge and shoulder blocking. Line should be under direction of assistant coach (he should explain the technique in the execution of each offensive fundamental). Skeleton formation should be utilized, with backs and center, to practice simple bucks and off-tackle plays to develop receiving, handling and running with ball (as well as to check on center stance, charge and passing).

30 min. Boxing of defensive tackles by backs and ends (head coach and assistant work together). All players should be used as tackles, ends or backs. Coaches should explain the technique desired in the boxing of the defensive tackle by backs and ends. This is dummy practice to acquire proper technique.

10 min. Sprints (10 yards) and a long run.

Wednesday:

20 min. Training exercises (body and leg exercises and grass drill). Captain and assistant coach direct, while head coach observes.

10 min. Sprints (10 yards). Head coach holds ball for starts.

60 min. Linemen under direction of assistant coach for scrimmage of charge and shoulder blocks. Introduction of double-teaming and its technique as well as line interference and cross-checking, with a later scrimmage of each of these.

Backs under head coach for punting and passing, as well as catching punts and receiving passes. Backs practice running off tackle from skeleton formation, with interference, and should also practice various buck plays, etc.

30 min. Head coach picks temporary team and introduces formation and off-tackle play, explaining the objectives of each player in relation to the play and formation. He should also introduce several simple bucks—taken from the same off-tackle play. One simple forward pass should also be introduced from the off-tackle play. All linemen should know or at least have an idea of stance, charge, blocking, double-teaming, line interference and cross-checking, at this time. Backs should know or have an idea of stance, starting and steps for off-

tackle plays, boxing, blocking, interference, passing and punting technique.

10 min. Sprints (10 yards and long run).

Thursday:

20 min. Training exercises (body and leg exercises and grass drill). Captain and assistant coach direct, while head coach looks on and comments.

30 min. Tackle practice—head coach explains proper technique in tackling by various methods (applying to various situations). Entire squad practices on dummy while head coach and assistant make constructive criticism and comment.

30 min. Linemen with assistant coach for line fundamentals, such as stance, charge, blocking, double-teaming, line interference, cross-checking. (Entire line organization for practice of all off-tackle plays and bucks as of Wednesday.)

Backs with head coach for backfield fundamentals such as stance starts and runs for off-tackle and bucks plays given yesterday, in addition to punting and passing practice.

60 min. Entire squad divided into teams for practice of formation, signals and off-tackle play to right and left. (If huddle is to be used, then it should be explained at this time.) Dummy practice of formation, off-tackle, pass and various buck plays against six- and seven-man defensive lines. Head coach should watch the technique and execution of all plays and especially the backs, while the assistant coach watches the linemen in their technique and execution.

10 min. Head coach should introduce punt formation and another play from regular formation.

10 min. Sprints (10 yards), long run.

Friday:

10 min. Sprints and fast grass drill.

20 min. Tackling practice.

30 min. Line and backfield fundamentals (same as Thursday). Coaches explain in further detail the punt formation and new plays given yesterday.

60 min. Dummy practice of all formations and plays given to date. Head coach should check on backs and formations, as well as plays. Assistant coach should check on lines from end to end.

20 min. Select two temporary teams for light scrimmage (boys that the coach knows are prepared). All plays should be scrimmaged against six- and seven-man lines and technique and execution should be explained from time to time. Entire squad will get an idea of the formation and plays under fire.

10 min. Sprints (10 yards) and long run (50 yards).

Saturday:

15 min. Sprints and grass drill.

20 min. Tackling practice.

1½ hrs. Scrimmage for entire squad (boys whom coaches believe are not prepared should be excused from body contact).

The second week should consist of heavy work, with training exercises and then a gradual letdown. More plays and formations should be added gradually, remembering to practice fundamentals first and then to execute plays or formations. Black-

board talks and skull drills should take place every day, with a gradual letdown to one per week.

Late Season Practice. Note: Only one week is presented, to show how the organization of practice is planned.

Monday:

20 min. Talk about faults, etc., of the last game—each player voicing opinion.

10 min. Sprints and grass drill.

10 min. Individual blocking and tackling practice.

20 min. Punt and pass practice (offensive and defensive).

30 min. Dummy scrimmage—timing and perfecting of plays, coordination of line and backs.

20 min. Players in last game excused—scrimmage for all players who did not get in last game.

(Scout meeting and preparation of strategy for next game.)

Tuesday:

10 min. Sprints and grass drill.

10 min. Blocking and tackling on apparatus.

20 min. Line practice under assistant coach. Fundamentals that looked weak in last game to be gone over from start to finish.

Back and end practice under head coach—passing and kicking . . . offensive and defensive.

20 min. Dummy offensive practice against opponents' defensive set-up. Head coach emphasizes certain plays, etc.

20 min. Signal drill for timing and perfecting of plays, head coach and assistant each taking a team.

20 min. Punting practice from different parts of the field. Sprints and long run (100 yards).

(Note: Scout meeting.)

Wednesday:

10 min. Sprints and grass drill.

10 min. Blocking and tackling on apparatus.

20 min. Line practice of fundamentals under assistant coach. Backfield practice of fundamentals under head coach.

60 min. Offensive and defensive scrimmage against opponents' offensive and defense. (Head coach and assistant should comment through scout report.)

20 min. Signal drill for timing and perfecting of plays. Sprints (10 yards).

Thursday:

10 min. Sprints and grass drill.

10 min. Blocking and tackling on apparatus.

30 min. Dummy practice of offensive and defensive against opponents' offense and defense.

20 min. Punt and pass defense.

20 min. Signal drill and sprints.

Friday:

10 min. Sprints and grass drill.

20 min. Dummy defense against opponents' offense.

10 min. Kick-off and return of kick-off.

20 min. Fast signal drill (plenty of spirit).

10 min. goals after touchdowns.

Note: For the balance of the season, team should get plenty of dummy scrimmage and signal drills for timing and perfecting of plays. Should get plenty of blocking and tackling. Study of defensive football.

FOOTWORK IN

THE BACKFIELD



By
Douglas A. Fessenden



Last year when the University of Montana needed a man to take over the work of B. F. Oakes as head football coach (Oakes was called to the Univ. of Colorado), they summoned Douglas A. Fessenden who for five years had been coaching football at Fenger High School in Chicago with marked success. Before going to Fenger, Mr. Fessenden coached at Brownsville and San Antonio, Texas. His writings on football have appeared in *Scholastic Coach* on several occasions.

EXACT footwork is essential to the success of a football offense. Especially this is true of an offense which makes deception an important part of the attack. Haphazard steps on the part of the ball handlers and wing-backs ruin more spins and reverses than good defensive play on the part of the opposition.

Consistent footwork is necessary for the proper timing of a play. The precise placement of the foot, the direction the toe is pointing, the center of balance, the direction of the turn all combine to make a play successful or otherwise. Of course, other factors enter into the problem, such as the size and general ability of the prospective back, but from the mechanical point of view nothing is quite so important as the manner in which the back places and picks up his feet.

Stance

There are two types of backfield stance; the two-point stance and the three-point stance. In either case the toes of both feet should be even. The back should stand with his weight well forward over the balls of his feet. In the three-point stance the hand away from the center is on the ground. In the two-point stance the hands or forearms rest on the knees. I prefer the three point stance in most instances. It is certainly best for the three front men, and when the material is green even the tail back should

speed of the pass and the starting ability of the back. Backs stationed less than five yards deep start with the foot nearest the point of attack.

Spin plays

A typical spin play (Fig. 1) may be handled with three different types of footwork by the fullback. The majority of coaches employ a right-side pivot with lateral travel for this play. The ball handler receives the ball slightly to the right side, shifts his weight to the right foot, pivots, bringing the left around forward one half

complete turn, fakes the ball to the wing-back (timing the pause by the extension and withdrawal of the ball), shifts the weight to the left foot, bringing the right foot around backwards and stepping off with it in the direction of the play. The spin man

must carry his weight low and well forward (as in the photographs above) throughout the movement and as he begins his advance toward the line. This footwork is on the whole entirely satisfactory. It is simple and comparatively easy to teach. The average back can become reasonably expert with the step after very little practice. The principal weakness of the above method, at least as it affects

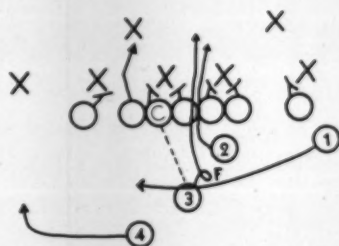


Fig. 1. Typical Full Spinner

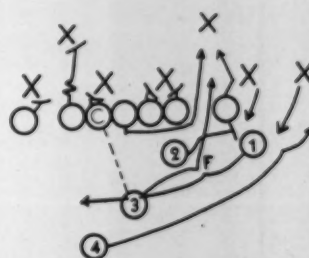


Fig. 2. Half Spinner

be down. It eliminates much pointing and gets the backs off to a faster and lower start.

Direct-pass starts

There is a fixed rule for starting on direct passes. Backs stationed five or more yards deep start with a cross step. They receive the ball sometime during the course of their second step, the exact spot depending upon the

Direct pass: Cross step start



G. L. Smith

Direct pass: Plunge start



the No. 3 back, is that the finish of the spin leaves him too deep. He has gained some ground laterally which speeds up the play, but has gained nothing forward. This can be corrected by having him take one step forward with his right foot, pivot on the advanced foot, swinging the left forward with a continuation of the same movement in a one half complete turn; fake, and finish spin in the manner described for the first method. This forward step serves two purposes: First, it gives the ball handler motion, making it easier to hold the body in balance for the first half turn; and, second, the ball handler winds up much closer to the line, thus offering less time for the defensive lineman, who (we hope) has committed himself in the direction of the fake, to recover. The footwork for this "step-forward" spin is diagrammed in Fig. 3.

A third, and to my way of thinking the poorest method of the three, has the ball handler accomplish the first turn by changing feet much in the same way of a weight man in a reverse. This footwork is used to some extent, but not very generally. The ball handler does not gain ground either forward or laterally until after the fake has been made. He is likely to be out of balance, and the spin, unless executed very smoothly, gives an impression of raggedness.

Half spins, variously designated as fake reverses and body spins, are probably a part of more offenses than the full spin. They develop more rapidly and are easier to execute. I do not believe that they are as effective for the purpose of attacking the middle of the line as the full spin, inasmuch as they come back so fast that the guard doesn't have time to commit himself to an error in his charge.

But I like them better for hitting the spot between tackle and guard. Here against a hard-charging tackle it is essential that the play get off in a hurry. A typical half spinner is diagrammed in Fig. 2.

Most coaches use one of two types of footwork for the fullback on this play. The ball comes back to the fullback's right hand as he steps forward and to the right with his left foot, pivoting slightly on the right foot but not advancing it. The body is twisted back to make the fake, and the right foot then steps off in the direction of

No. 2 back handling the ball on a fake reverse to the left wingback on a double wingback formation, with the fullback taking the delayed pass. The No. 2 back, because of his proximity to the line of scrimmage, would gain no advantage by using the "step-forward" type of pivot which is the style Coach Fessenden recommends for the deeper backs.

the play. The weight should be carried largely on the left foot to insure a quick get-away. (2) The second method is to step off in the direction of the wing back with the right foot, follow forward with the left foot, pivot right on the ball of the right foot keeping the toe of the left pointing as nearly as possible in the direction of the play; twist the body to make the fake, following the ball with the face; fake, and step off with the right foot in the direction of the play. Of the two I prefer the second method because the fake is completed closer to the point of attack, and secondly because I feel that the extra step gives the play more of the appearance of a reverse, definitely a desirable thing.

Wingback starts on reverse

On reverses the wingback may start with either a cross step or a pivot step. If he starts with a cross step he will reach the ball handler sooner, but will be so shallow at the point at which he must angle into the line that the turn will be difficult. If he uses the pivot start he will be slower to the ball handler but, by virtue of a better position on his turn, will be a tenth of a second faster at the point of attack. To me this question answers itself. If it were possible to employ two types of footwork for wingbacks the cross steps would be the choice on spin plays and the pivot on reverses. However, as this is out of the question, we prefer to use the pivot step on all plays in which the wingback runs behind the line of scrimmage. Description of each step:

(1) *Cross step.* The right wingback turns on the ball of his left foot, shifting his weight to that foot, swings the right across in front in the direction he will run.

(2) *Pivot step.* The right wingback pivots on his right foot, shifting weight rapidly from right to left as he steps off with the left foot.

The footwork of the ball handler on reverses is the same as it is on spin plays. Greater deception will be ob-

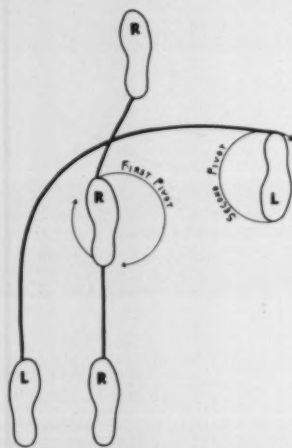
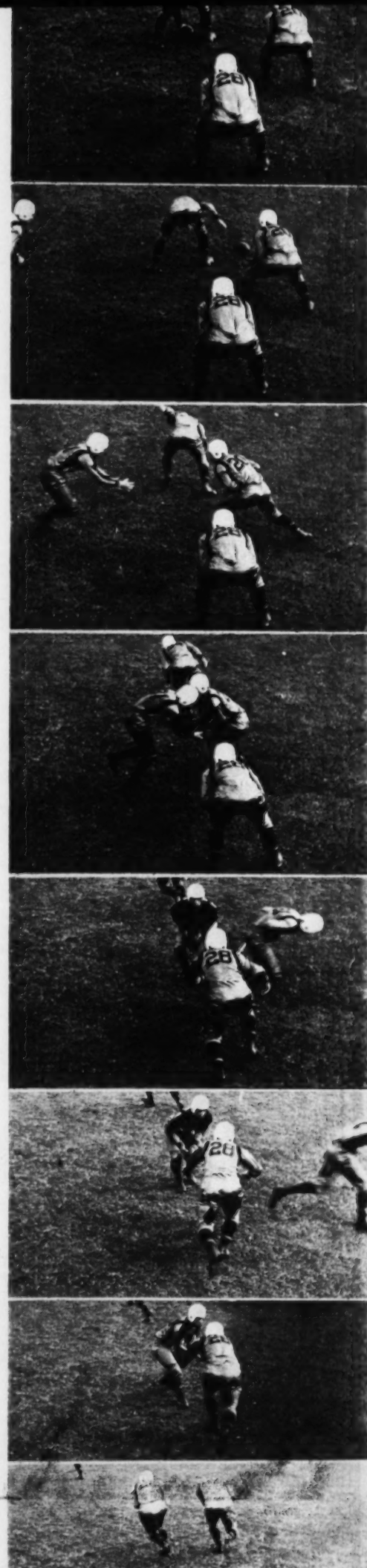


Fig. 3
"Step-forward" Pivot



From moving pictures
by Owen Reed, courtesy
White Plains, N. Y., High School.

tained if he will continue the action of the complete spin after he has passed the ball to the wingback.

Footwork in eluding tackler

There are numerous stunts backs can be taught to use in carrying the ball. Cross-over steps, side steps, pivots, open-field reverses, change of pace, weaving, reversing of field, and straight-arming, to name a few of them. Some of these stunts do not involve any fixed kind of footwork; reversing the field for example, or weaving; others depend on some sort of native ability and are impossible to teach. We concentrate on the first four mentioned above, combining the straight-arm with the first three.

Cross-over step. The back approaches directly at the tackler, faking with head and advance foot in one direction then crossing over sharply in the opposite direction with the other leg. The drive comes from the advance foot. The hips must be pulled away with the step. This stunt when not wholly successful may be followed by a pivot.

Side step. The back fakes the tackler with near foot and head. As the tackler commits himself the back takes a wide diagonal step with the outside foot, swinging the near leg behind as the lateral travel is obtained. Again the back should be coached to pivot if he only partially gets away.

Pivot. The pivot is made on the outside foot always spinning away from the tackler. The knee of the inside leg is brought up smartly as the pivot is made tending to loosen the grip of the tackler. Lead with the head and shoulders, dropping them far forward, and lunge as the pivot is completed. Do not leave the ground. If the spin is to be effective it must be executed sharply, even viciously, and should be used *only* when the back is in the grip of an opponent.

Open-field reverse. This stunt is generally employed for one of two purposes: (1) To shake a prospective forward-pass receiver loose; (2) to avoid the tackler after the pass has been completed. If running to the right, the back stops with the left foot in advance, legs pretty well spread, squats and shifts back weight well over the right foot. He then pivots inward—that is, to the right—on the balls of both feet and steps off in the direction he is to go with his left foot. This stop must be abrupt. It is not good if the runner coasts to a halt.

If the back has a few stunts that he can execute properly, and actually uses them at the right time in a game, he is far better off than the boy who has been taught a whole string of them and probably never uses them at

all. Fullback handling the ball on a full spin play. The footwork illustrated here is the type most commonly used. The fullback receives the ball in place, pivots on his right foot as he brings his left around forward one half complete turn. He has obtained some lateral travel which speeds up the play, but nothing toward the point of attack until after the fake has been made. However this spin step is easy to teach, and in most cases effective.

all. Tacklers don't give the back time to think the situation over and select the proper stunt.

Teaching methods

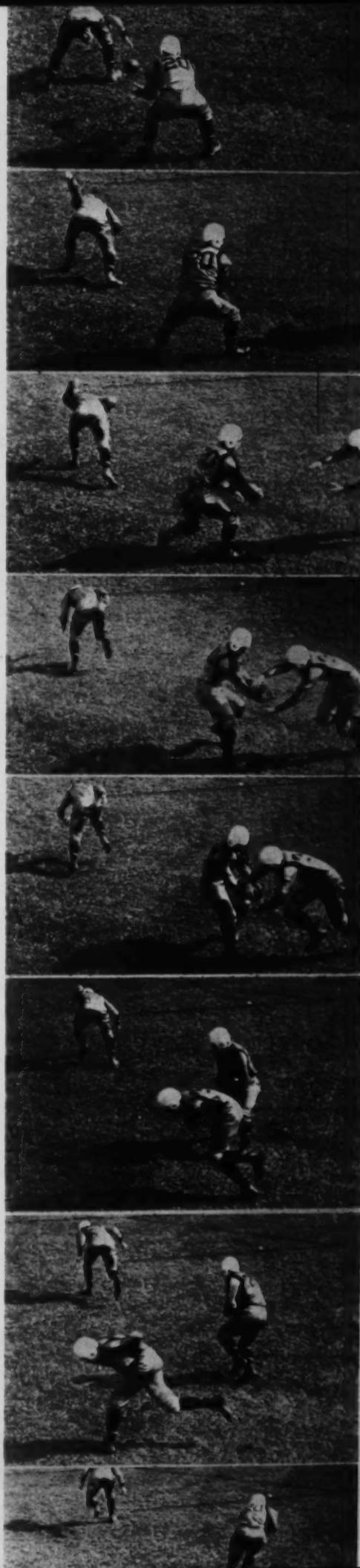
Insofar as footwork is concerned the high school coach ordinarily starts from scratch. He has obviously a much greater teaching and developmental problem than the college coach. High school boys can execute spin steps, pivots, side steps and the like as effectively in relation to their competition as can college athletes, and a little painstaking care in teaching with considerable patience will pay dividends in later touchdowns.

For preliminary teaching I divide the backs into two single file lines one facing the other about ten yards apart. From this setup we teach the cross-over, the side step and the pivot. The man at the head of one line feints a tackle as the man from the opposite line executes the step. The two men return to the end of opposite lines and the next two repeat the movement. This arrangement makes it possible for the coach to watch and criticize each individual performance, impossible when the men are spread out over the field in pairs. It also permits the entire group to profit by observing each individual perform under supervision. We use this same setup for preliminary teaching in tackling.

In spring football and during the early fall practice the backs need at least fifteen minutes a day of this work. Later when the coach is sure that his men have mastered the technique and need only practice, the backs can be paired off and the same amount of work accomplished in a much shorter time.

A setup very similar to the first-mentioned is used in teaching and practicing the open field reverse. Usually the ends are included in this work. The two lines face each other twenty yards apart, with about a ten-yard offset. A center and a passer is also utilized. The head of the offensive line starts with the snap of the ball on a sharp diagonal run, covered by the head of the defensive line; executes his reverse, and receives the pass. Men alternate in the two lines.

Spin steps must first be taught by individual instruction. The point is controversial, but I really think it is best to divide the step into three parts and teach them one at a time. It is hard to put the proper emphasis on the detail of each part of the movement if it is taught as a whole. Once the player has mastered the rudiments of the steps, he can be inserted into a backfield running dummy scrimmage and worked at half speed. It is a mistake to force a player along too fast during the formative period, and he most certainly should never be scrimmaged before the technique of each movement has become practically automatic.



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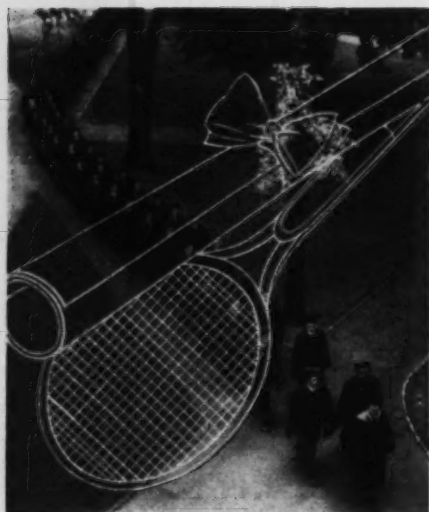
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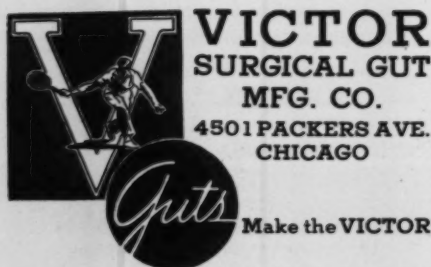


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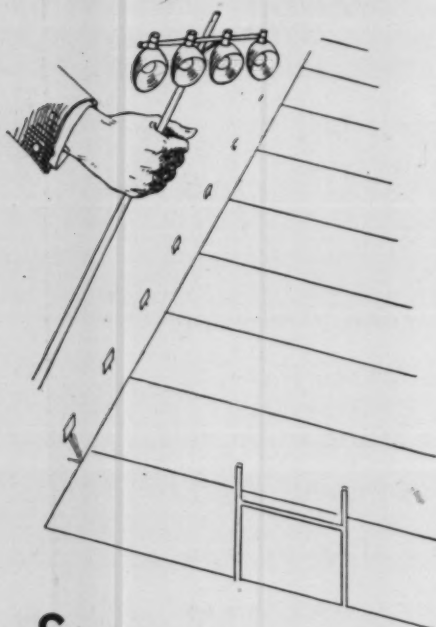
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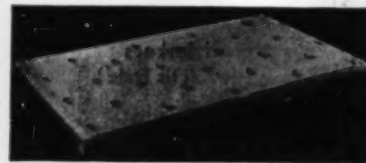
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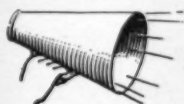
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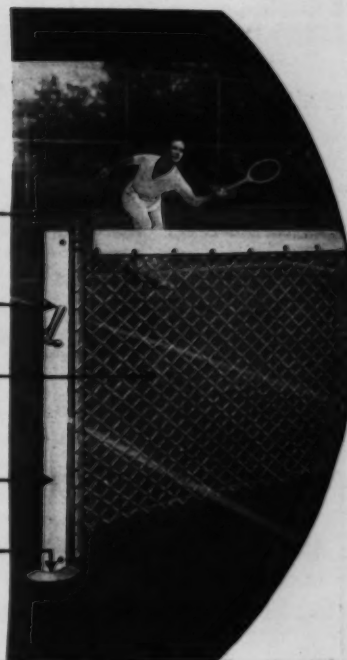
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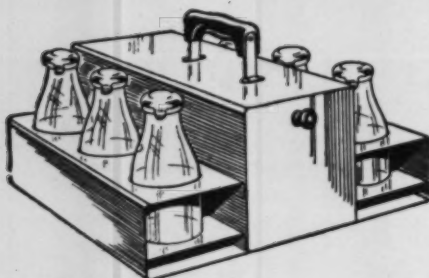
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BUTLER UNIVERSITY—Indianapolis, Ind. Aug. 10-15. Paul D. Hinkle, director. See advertisement on page 32.
CAM HENDERSON'S—Marshall College, Huntington, W. Va. Aug. 17-22. Cam Henderson, director.
COLGATE UNIVERSITY—Hamilton, N. Y. Aug. 17-22. William Reid, director. See advertisement on this page.
UNIVERSITY OF DENVER—Denver, Colo. July 20-31. See advertisement on page 32.
DUKE UNIVERSITY—Durham, N. C. July 20-25. Wallace Wade, director. See advertisement in May issue.
UNIVERSITY OF ILLINOIS—Champaign, Ill. June 16-Aug. 8. Chester O. Jackson, director.
INDIANA BASKETBALL SCHOOL—Logansport, Ind. Aug. 17-22. Clifford Wells, director. See advertisement on page 32.
UNIVERSITY OF INDIANA—Bloomington, Ind. June 17-July 14. Z. G. Clevenger, director.
UNIVERSITY OF IOWA—Iowa City, Iowa. June 8-July 15. O. M. Solem, director.
KANSAS STATE HIGH SCHOOL—Topeka, Kansas. Aug. 24-29. E. A. Thomas, director.
UNIVERSITY OF MICHIGAN—Ann Arbor, Mich. June 29-Aug. 21. L. A. Hopkins, director.
MORNINGSIDE COLLEGE—Sioux City, Iowa. Aug. 17-22. J. M. Saunderson, director.
NAT HOLMAN'S BASKETBALL COACHING SCHOOL—College of the City of New York, N. Y. June 22-26. Walter Wil-

liamson, director. See advertisement on this page.
NORTH CAROLINA UNIVERSITY—Chapel Hill, N. C. Aug. 17-29. Robert A. Fetzer, director. See advertisement in May issue.
NORTHEASTERN UNIVERSITY—Boston, Mass. June 22-27. Edward S. Parsons, director. See advertisement on page 33.
NORTHERN COACHING SCHOOL—Bemidji, Minn. August 24th to 29th. Alex J. Nemzek, Moorhead, Minn., or H. M. Robbins, Bemidji, Miss. See advertisement on page 33.
NORTHWESTERN UNIVERSITY—Evanston, Ill. Aug. 17-29. K. L. Wilson, director. See advertisement in May issue.
OHIO UNIVERSITY—Athens, Ohio. June 15-Aug. 28. O. C. Bird, director.
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SAM HOUSTON TEACHERS COLLEGE—Huntsville, Tex. July 16-23. Joe Kirk, director.
SHAKER HEIGHTS COACHING SCHOOL—Shaker Heights High School, Cleveland, O. Aug. 23-30. Harry F. Newman, director. See advertisement on page 34.
SPRINGFIELD COLLEGE—Springfield, Mass. June 29-Aug. 1. Elmer Berry, director. Olympic Study Tour, June 29-Sept. 1. See advertisement in May issue.
TEXAS H. S. COACHES' ASSN.—Fort Worth, Tex. Aug. 3-8. H. N. Russell, Fort Worth.
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[Continued from page 12]

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Aluminum paint, if it is used with the proper carrier for outdoor use and the color is not objectionable, is a good wire fence paint. The regular red-lead primer should be used under aluminum paint.

Wooden bleachers

Wooden bleachers and wooden seat tops on cement grand stands require a good grade of deck paint. A priming coat of paint should always be used under deck paint. Any wooden posts to be replaced should have the part that is to be in the ground first painted with an asphaltum type of paint.

Tennis courts

Tennis courts of clay or crushed stone, which will no doubt receive a terrific beating during the summer months, would be grateful for a generous application (400 lbs. to a court) of calcium-chloride. Calcium-chloride acts as a binder, keeps down weeds, and draws moisture from the air during the night, keeping the surface of the court moist, and preventing the court from powdering and blowing away.

Farther & Faster

To win a championship today a man must turn in a performance that would have been a world record a quarter of a century ago. The following table shows world's track and field records of 1915 and those of today:

Event	1915	1935
100 yards.....	9.6	9.4
220 yards.....	21.2	20.3
Quarter mile.....	47.4	46.4
Half mile.....	1:52.2	1:49.8
One mile.....	4:14.4	4:06.7
120 hurdles.....	15.0	14.2
440 hurdles.....	56.8	52.6
(Fractional inches omitted)		
High jump.....	6 ft. 7 in.	6 ft. 9 in.
Broad jump.....	24 ft. 11 in.	26 ft. 8 in.
Pole vault.....	13 ft. 2 in.	14 ft. 5 in.
Shot put.....	51 ft. 0 in.	57 ft. 1 in.
Discus.....	156 ft. 1 in.	171 ft. 11 in.
Javelin.....	204 ft. 5 in.	249 ft. 8 in.

All Sports Record Book. The 1936 edition of Frank Menke's almanac of more than 90 sports, their histories and heroes, is off the press. It contains all national and world's records, and even goes beyond the realm of pure sport into such byways as rope-skipping, doughnut-eating, face-slapping and skunk-catching.

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